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PROGRAM OF STUDIES

FOR THE

ELEMENTARY SCHOOLS OF NEW HAMPSHIRE



DEPARTMENT OF PUBLIC INSTRUCTION

SECOND EDITION

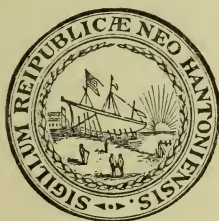
1910

Charles H. Johnston

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PREFACE.

At the 1905 session of the General Court, the following concurrent resolution was passed:

"That the superintendent of public instruction be authorized and directed to prepare a course of study as a model for the common schools, and to send one or more copies to every school district in the state."

In accordance with this resolution this program is hereby submitted to the local school authorities of the state. It has been made adaptable, both in its schedules and in its outlines, to all the schools of the state, both city and rural, both graded and ungraded systems.

The program is based upon the course of study prepared by the Educational Council and printed by the State Teachers' Association in 1903. The present edition embodies no material changes from that of 1905. Such changes as are made are chiefly corrections of evident mistakes in the former edition and such adaptations as five additional years of educational and pedagogical experience have seemed to justify.

The superintendent acknowledges the great value of the unpaid services and counsel of many teachers and school officers to whom the thanks of the department are due. In fact, the whole document may fairly be said to represent the teaching experience of the state, as criticisms and suggestions have come to the department from a multitude of teachers.

HENRY C. MORRISON,

Superintendent of Public Instruction.

CONCORD, July 16, 1910.

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INTRODUCTION.

A program of study, with its subordinate courses, is at best a line to hew to. Until it is actualized in the schools, it is merely a thing of paper. The program here submitted is capable of rendering great service to the local school systems of the state, but it will accomplish little save as it is placed under efficient, expert supervision for interpretation and enforcement.

The program, if desired, should be formally adopted by each school board. It is especially recommended that school boards, after adopting, neither make nor allow any change to be made for at least several years. One of the banes of school administration is the frequent change of the program. New members of boards, new teachers, new superintendents, are prone to have ideas peculiar to themselves, which they wish to have carried out in the schools. The result is frequent changes and destruction of the essential process of cumulation. No program of work, or other school policy, is capable of demonstrating and securing its full good effect short of the time it takes a single class to pass through the full length of school life. Nobody can claim to be all-wise, but it is better to seize upon and follow an opinion which commends itself as sound to those appointed to be in authority than to run a race of opinions, with all the inevitable shifting involved.

Much time and thought has been given to the preparation of this program, the minds of the teachers of the State have been, so far as possible, ascertained and followed, and the best educational authority of the nation has been consulted. Gaps and inconsistencies have probably crept in, and it will always be a service to the department to have these pointed out.

It is expected that the institute work of the coming years will be based upon the lines here laid down. Teachers may consult the superintendent by mail or otherwise, and prompt answers will be given so far as the office force of the department will permit. It is expected that bulletins will from time to time be issued covering important or difficult points of instruction, and the same will be mailed to all who apply for them. Teachers should ask to have their names placed upon the mailing list for such material.

School boards are advised to allow and encourage teachers frequently to visit the Normal Schools at Plymouth and Keene, or some nearby city school system, for observation of practical teaching.

The program is laid out on a basis of thirty to thirty-six weeks. Obviously it will be more difficult, but not impossible, to accomplish the results called for in the shorter period than in the latter. The chief difference, however, will usually be in point of thoroughness. Furthermore, many schools from their circumstances can accomplish more in thirty than others in thirty-six weeks.

In introducing the program where there has previously been no course of study at all, it cannot be expected that the whole school will be able to follow it at once. The entering class can follow from the beginning, and the younger pupils all very closely. The older pupils will have to approximate. In a few years, thus, the whole school will be following the program.

DEFINITIONS.

Elementary school.

Grades I to VIII, inclusive, usually, or the period of school the next preceding the secondary school, the pre-adolescent portion of the child's school life.

Secondary school.

High school or academy, usually grades IX to XII, inclusive, the adolescent portion of the child's school life. The secondary school shows a tendency to reach down and include the last two elementary years, and the whole course of twelve years shows a tendency to shorten.

Common school.

Originally synonymous with what is now known as elementary school. The "common school" means the school which everybody is supposed to attend, as distinguished from the school of special privilege or opportunity. The secondary school is nearly as much a common school in New Hampshire as is the elementary.

Program of study.

The whole scheme of studies presented by a school, often inaccurately called course of study.

Curriculum.

A particular line of study within the program. Used in secondary schools chiefly.

Course.

The work of a single study for a single year. Grade VI arithmetic is a course.

Time-table.

The daily schedule of work.

Period.

A regular subdivision of the time-table.

Graded school.

A school following a regular program of study and advancing pupils in accordance with their attainments.

Classified school.

An elementary school in which are enrolled only pupils of the same grade.

Grade.

Pupils doing the work of the same year.

Semi-classified school.

An elementary school in which are enrolled pupils of several different grades, but not of all grades.

Mixed school.

An elementary school in which pupils of all grades are enrolled.

Primary school.

Grades I to IV.

Grammar school.

Grades V to VIII.

Intermediate school.

In a system or building consisting of three semi-classified elementary schools the middle is the intermediate.

School.

A body of pupils in charge of one teacher, for whom a register is kept. This is the administrative distinction. For convenience all the pupils in a single building are often, in common parlance, spoken of collectively as a school.

CHAPTER I.

OUTLINE OF WORK.

Year	Subjects A	Periods per week	Subjects B	Periods per week
I.	Reading	10	Music	3 to 5
	Writing	5	Drawing	2
	Elementary language	5	Handwork	3
	Number	5	Nature	2 to 5
II.	Reading	10	Music	3 to 5
	Writing	5	Drawing	2
	Elementary language	5	Handwork	3
	Number	5	Nature	2 to 5
III.	Reading	5	Music	3 to 5
	Writing	5	Drawing	2
	Composition	5	Handwork	3
	Spelling	5	Nature	2 to 5
	Arithmetic	5		
IV.	Literature	5	Music	3 to 5
	Writing	5	Drawing	2
	Composition	5	Handwork	3
	Spelling	5	Nature	2 to 5
	Arithmetic	5		
V.	Literature	3	Music	3 to 5
	Writing	2	Drawing	2
	Composition	3	Handwork	3
	Spelling	5	Nature	2 to 5
	Arithmetic	5		
	Geography	5		
	Physiology and Hygiene	2		

VI.	Literature	3	Music	3 to 5
	Writing	2	Drawing	2
	Composition	3	Manual Training	3
	Spelling	5	Carpentry	
	Arithmetic	5	Sewing	
	Geography	5	Nature	2 to 5
	Physiology and Hygiene	2		
VII.	Literature	2	Music	3 to 5
	Composition		Drawing	2
	Spelling	5	Manual Training	3
	Grammar	5	Carpentry	
	Geography	5	Sewing	
	History	5	Cooking	
	Physiology and Hygiene	3	Nature	2 to 5
			Arithmetic	5
VIII.	Literature	2	Music	3
	Composition		Drawing	2
	Spelling	5	Manual Training	3
	Grammar	5	Carpentry	
	Geography	5	Cooking	
	History	3	Sewing	
	Civics	2	Nature	2 to 5
	Physiology and Hygiene	3	Arithmetic	5

NOTES.—This outline is designed for all schools, mixed, classified, and semi-classified. It indicates in a general way what subjects should be under instruction each year and the proportion of time which should be given to each.

A and B.

The subjects listed in Column A are those which are requisite in every school because either required by law, required for admission to high school, or essential as a part of the education of the child who has completed the elementary school course of study. The subjects listed in Col-

umn B are more or less optional in character, either because of inability of teachers, lack of money, reluctance to accept new ideas or other cause. It should be understood, however, that every subject in Column B, from the standpoint of educational science and the rights of the child, is as essential as any subject in Column A. *There is no reason in the nature of things why all should not be taught in every elementary school in the state.*

Periods.

The columns showing number of periods per week indicate only how often a subject needs to appear on the daily time-table,—once a day, twice a day, every other day, and so on. Obviously this arrangement will have to be varied somewhat to meet the needs of different schools. On the other hand, the teacher will note carefully that a subject is often taught better when it is combined with some other for a day. For instance, the nature lesson for the day will frequently be the geography lesson also.

Composition.

No time is given for composition in years VII and VIII for the reason that written work in the various subjects will furnish abundance of composition material and should be treated as such.

Arithmetic.

Under competent and thorough teaching, six years is a sufficient period in which to teach all the arithmetic a child needs to know, and arithmetic is therefore transferred to the B column at the beginning of the seventh year. Doubtless most schools will think it necessary to carry arithmetic on throughout the elementary school. See also chapter on arithmetic.

Reading.

In years I to IV, nature, history, and geography stories should form a large part of the material selected for reading and composition. (See chapters on these subjects.)

Reading, as the process of learning to read, ought to be complete at the end of the third year. After that the problem comes to be teaching the love of good reading, and to mark the distinction, the reading time is thereafter called literature.

The years are given in order to show what work children of the different years of school life should be doing. The teacher of an ungraded school is cautioned that these different years *should not ordinarily be used as units for classes*. Children of several different years may often be taught in the same class. For instance, in the small ungraded school of twenty pupils or less, all the reading of the eight years can usually be handled in two or three classes; all the spelling in two classes; all the writing in one or two classes, and so on.

School boards are cautioned that teachers cannot get respectable results if their schools are too large or their classes too numerous. If the ungraded school has over thirty pupils, or if it is found impossible to keep the number of regular periods per day at eighteen or under, either another school should be started, or, better, an additional teacher should be employed, and the school can then be partially classified.

The time for each period may be as follows: first and second years, ten to fifteen minutes; third and fourth years, fifteen to twenty minutes; fifth and sixth years, twenty to twenty-five minutes; seventh and eighth years, thirty minutes. Spelling should not be given more than fifteen minutes to a period in any year; much less will usually give the best results. These time estimates cover the times during which the attention of children of different ages can normally be held, and the teacher should train herself to accomplish lessons within these time limits.

In years I to IV, nature and history stories should form a large part of the material selected for reading and language, or composition exercises. (See courses in reading, language, nature and history.)

CHAPTER II.

THE DAILY TIME-TABLE.

In making and following a daily time-table, two extremes must be avoided,—on the one hand neglect of the regular order altogether, which is simple lack of system, and on the other such slavish adherence to the time-table as to destroy all spontaneity and let pass the many opportunities created by the special circumstances of the day. The time-table, like the program of study, is an excellent servant but a bad master. Neither will take the place of thoughtfulness in the teacher.

The unit of the time-table is the period, and much trouble will be avoided if teachers recognize at the outset that all effective teaching must obey the laws of fatigue and flagging power of attention on the part of pupils. Effective teaching demands not long periods but concentrated attention and forceful instruction. The ordinary limits of attention under favorable conditions may be seen in the following table:

LIMITS OF ATTENTION.

Grades	I to II	.....	10 to 15 minutes.
	III to IV	.....	15 to 20 “
	V to VI	.....	20 to 25 “
	VII to VIII	.....	25 to 30 “

Of course the fatigue limit is reached much sooner in some subjects than in others,—soonest in arithmetic and spelling, later in reading and geography, latest in handwork and drawing. Again, the power of sustained attention is greatest in the morning, runs down somewhat irregularly until about an hour after the opening of the afternoon session, and then recovers somewhat the last hour of the day. Recess and other diversions give a brief recovery from fatigue, and the

general increase of fatigue through the day is much lowered by good light and ventilation, by inspiring teaching, and by the succession of unlike subjects on the time-table, e. g., by following arithmetic with reading, writing, or handwork. One of the chief benefits of the subjects in Column B of the outline of work is that they draw upon fresh brain areas, and therefore allow time for recovery from fatigue.

The construction of a time-table for a classified or semi-classified elementary school is a comparatively simple matter so long as the laws above mentioned are obeyed. For a mixed school it is a more difficult matter. The following suggestions and model are given, but it must be understood that these are only suggestions. The individual teacher must adapt them to her own conditions.

TIME-TABLE FOR MIXED SCHOOL.

This time-table assumes a school of twenty to thirty pupils, registering children in each of eight grades,—a set of conditions much more difficult than is common.

FORENOON.

9.00— 9.05.	Opening exercises.
9.05— 9.55.	Arithmetic and number.
9.55—10.05.	Reading I.
10.05—10.15.	Reading II.
10.15—10.30.	Composition.
10.30—10.40.	Recess.
10.40—10.50.	Spelling.
10.50—11.00.	Writing.
11.00—11.20.	Grammar I.
11.20—11.40.	Grammar II.
11.40—12.00.	Nature or music.

AFTERNOON.

1.30— 1.50.	Geography I.
1.50— 2.10.	Geography II.

- 2.10— 2.20. Reading I and elementary language.
2.20— 2.30. Reading II and elementary language.
2.30— 2.50. History I.
2.50— 3.10. History II.
3.10— 3.20. Recess.
3.20— 3.40. Reading III and IV, alternating.
3.40— 4.00. Physiology and hygiene (several classes alternating).
4.00— 4.30. Handwork or manual training and drawing, alternating.

NOTES.—The time-table as above outlined can of course be simplified in case there are some grades in which there are no pupils, as is usually the case. As it is, it will be noted that there are but nineteen periods exclusive of recesses in place of the thirty or forty which are often felt to be necessary.

In following this or any other time-table, and improving upon the same, certain principles must be observed in addition to those already noted.

I. The teacher must conceive her schoolroom to be a workshop in which teacher and pupils are working together in the process of learning, rather than a hall of judgment in which the teacher's sole business is to find out whether or not the children have learned lessons. *No home work ought to be required in any class or grade of elementary school, rural or urban, mixed or classified.* The schoolroom is the place for school work and the child's out-of-school hours ought to be left free.

II. Children at about the same degree of attainment in a given subject ought to be handled together. The behests of parents to have separate classes formed for their children should be respectfully but firmly resisted. On the other hand, children of more than average ability should be allowed to advance as rapidly as safety will permit. Both the above principles if followed will have a tendency to reduce the number of classes as the school year goes on.

III. In some cases the school should be handled together, notably in arithmetic, composition, spelling, writing, and handwork. To illustrate, consider a day's teaching in arithmetic.

The day has fifty minutes set aside in which to get all the arithmetic out of the way. From elementary number work upward there are perhaps thirty children at all stages of advancement. To hear recitations in the routine manner eight different periods or at least two hours and twenty minutes would be required. From the nature of the subject, practice by the pupil, in all but the first two years, is more important or at least takes more time than instruction as such. This practice requires some oversight by the teacher and an occasional blackboard recitation.

The clock points to 9.05, and the period has begun.

Five minutes are devoted to rapid directions to the pupils who need them as to what work to do today. Others know what to do and proceed without directions.

A group, or it may be an individual, of the older pupils require some instruction as to the principles of a new process which they are ready to begin. Ten minutes will take care of this.

Then twenty minutes are devoted to the two classes of beginners in number.

After that the teacher has five minutes in which to look rapidly over the work of pupils at their seats and ten minutes for a blackboard recitation from some pupils who have finished a certain process, are ready for recitation, and have been getting their work on the board since the beginning of the period.

The hour 9.55 has come, and the whole school is done with arithmetic for the day, and at the end of a week incidentally have learned more arithmetic than they would have by tediously working over imperfectly comprehended processes at home and yielding up the result by a routine daily recitation. It would be a great help to have all pupils keep their work in neat notebooks, which the teacher should further examine out of class time.

Of course the above is only a suggestion. As the wide-awake teacher gets the knack of handling her work in this way she will improve upon it from day to day, and in most mixed schools in which there are much less than thirty pupils there will be proportionately more time for individual work.

IV. By intelligent classification much time can be saved, for, even were there plenty of time, it is by no means necessary that there should be a distinct period for every grade. Notably in reading.

It is a rare school in which more than four classes in reading are within reason. There will always be a class of beginners who must be handled by themselves, and usually a class of young children somewhat more advanced, the beginners of the last year perhaps. After that, two classes at the outside will cover the whole school.

It should be observed that reading is not a consecutive subject like arithmetic or grammar. It is not essential that every child should read every book throughout as every other child does. As fast as a pupil acquires power to read he may be allowed to read with the next class. In this way four classes at the beginning of the year may frequently be reduced to three or even two by the end.

V. By alternating year's work, time may be saved in subjects in which there are more than two consecutive years in the program. For instance, in geography it is not of critical importance whether a pupil studies North America before or after he studies Europe. Hence, assuming that there are four grades in geography, V and VI may be combined this year on sixth year work, and next year the same pupils take fifth year work. And so with VI and VII or VII and VIII.

VI. By correlation of studies much time in the aggregate can be saved. The program provides for this to some extent outright, as, for instance, when it reduces the amount of time for reading and composition in the upper grades. The alert teacher will find other opportunities from day to day. For instance, when the geography class comes to longitude and time, the subject can take the place of arithmetic for the time being. It is not necessary to teach it in both subjects.

CHAPTER III.

READING.

The main purpose to be kept in mind in teaching reading is the development of the power of thought-getting from the printed or written page. The pupil must be trained from the very beginning to read thoughts, not merely to learn and pronounce words. Teachers are cautioned not to allow even beginners to form the habit of pronouncing a sentence word by word. School boards are advised that a class cannot properly be said to be making progress in reading, unless pupils show by their expression that they comprehend what they are reading.

The reading of the common school as a whole may be said to show three phases:

First, it is a matter of teaching the mechanics of reading, commonly called teaching to read. This process should be fully complete by the end of the third year.

Second, it is a matter of training the voice to clear, distinct, accurate, pleasing enunciation. This process should begin as early as the beginning of the third year, and the teacher must be unceasingly vigilant in its pursuit so long as children are in school,—vigilant not only in the period devoted to reading, but in those devoted to other subjects as well.

Third, it is a matter of leading the child through the teaching of reading into some acquaintanceship with the world's best literature. This process should begin with the primer, and not be relaxed so long as the pupil remains in school. Only reading of real literary merit should be supplied, and after the third year the books used should be for the most part complete pieces, not collections of selections.

The teacher is cautioned that every exercise in arithmetic,

history, geography, physiology, civics, composition and grammar is also a recitation in reading. Careless, slovenly reading of an example in arithmetic on any day may more than offset the gain of the reading lesson for that day.

FIRST YEAR.

I. (a) Teach objectively from fifty to one hundred words chosen from the basal reader in use. Teach these words from the blackboard or chart; both may be used to advantage. Keep up a constant review of the words taught. (b) As fast as the stock of words becomes sufficient, sentences should be formed from them, written on the board, and the pupils taught to read them as wholes.

II. At the end of from three to five months, the books may be placed in the hands of the children and then the reading may be more and more from them. Always see to it that the pupil gets the thought of what he reads. His expression will tell you whether he does or not.

After the books are in the pupils' hands, the new words of each lesson should be placed upon the board, studied and learned, before commencing to read. As soon as the pupils begin to get some mastery of the sounds, the children should discover the pronunciation of all new words for themselves.

III. After about five months' work,—one or two months with the books,—begin to teach the sounds. Do not give the sounds abstractly. Have the pupils learn them from words which he knows—thus, the sounds *m* and *at* from *mat*; *l* and *ight* from *light*, and so on.

Avoid the use of diacritical marks. The pupil can gradually, during the first two years, acquire the knack of distinguishing the quantity of vowels and the quality of consonants in new words, by inspection of the words in which they occur. For illustration, note the effect of silent *e* in *not* and *note*, *mad* and *made*, upon the quantity of the preceding vowel.

Do not undertake to complete the mastery of the sounds during the first year. It is two years' work, and then there is a margin left for review and cleaning up in the third year.

But drill upon sounds, while it must not be allowed to become irksome, should be unremitting. Facility in reading and ready ability to appreciate the content of reading in the third, fourth, and upper grades will depend in a large measure upon the freeing of the pupil's mind from the mechanics of reading by the sounds drill of the first two years.

As fast as sounds become familiar to the class, they should be given quick perception drills daily upon these sounds. Perception cards will be found one of the teacher's most useful devices, but many others will be employed by the resourceful teacher.

The teacher must familiarize herself with the principles of phonics and so become independent of all systems. The capable teacher will invent the best devices of teaching.

RESULTS AT THE END OF THE FIRST YEAR.

Pupils should be able to read readily at sight from any ordinary first reader. This is the real test of attainment, not the number of books which the class may have read. A certain number of books to be read are recommended in order to give scope and breadth to the reading, but the number is not to be taken as a prescribed course.

Before the close of the first year, see that the children know the alphabet regularly and in order.

SUGGESTED LIST OF READING MATERIAL FOR FIRST YEAR.

*Graded readers.**

Child Life	MacM.
Heath	Heath
Baker & Carpenter	MacM.
Art Literature	R. M. & Co.
Stepping Stones to Literature.....	Silver
Jones	Ginn

*Classes will usually need to read several primers and several first readers from the graded list.

*Supplementary.**

Sunbonnet Babies	R. M. & Co.
Overall Boys	R. M. & Co.
Wideawake Primer	L. B. & Co.
Folklore Primer and 1st Reader.....	A. M. & G.
Hiawatha Primer	H. M. & Co.
Fairy Tale and Fable.....	A. B. C.
Six Nursery Classics.....	Heath
So-Fat and Mew-Mew.....	Heath
Eugene Field Reader.....	Scribner
Indian Primer	A. B. C.

Every teacher should have:

McMurry's Special Method in Primary Reading....	
.....	MacM.
Hall's How to Teach Reading.....	Heath
Arnold's Reading: How to Teach It.....	Silver
Laing's Reading	Heath

SECOND YEAR.

I. From the beginning of the year, review the words and sounds of the first year by the quick perception method. Gradually extend the sound drill to include the more obscure vowels, the initials and the terminals.

II. Beginning in September, review rapidly the basal readers of the first year and one or more of the supplementary readers.

III. By the first of November at the latest, pupils should be reading from the second reader. The basal readers of the second year may be several of the second readers named below, or of like quality. Beginning with this year, it is especially needful that the pupils should have a variety of reading. It is destructive of all real progress to keep the class reading over and over again the same set of books. Therefore, in addition to the basal readers, each class should be provided with from five to ten sets of supplementary readers.

*To be read toward the close of the year. Including primers and first readers, each class ought to read at least ten books from the above list during the first year.

Toward the end of the year, give much quick perception drill on sentences. Two courses may be followed. In the first, the pupils turn their backs on the blackboard while a sentence is being written thereon. At the word of the teacher, they turn, glance at the sentence, turn back, and are asked to give the sentence. In the second, pupils are required to glance rapidly over a sentence in the reader, look away, and give the sentence without reference to the book.

RESULTS AT THE END OF THE SECOND YEAR.

The class should at the end of the second year be able to read at sight readily from any second reader of the graded series listed below.

READING MATERIAL FOR SECOND YEAR.

Graded readers.

Child Life, II	MacM.
Stepping Stones, II	Silver
Graded Literature, II.....	Merrill
Brooks, II	A. B. C.

Supplementary.

Hiawatha Stories	H. M. & Co.
Around the World, I.....	Silver
Reynard the Fox	A. B. C.
Wideawake	L. B. & Co.
Boy Blue and His Friends.....	L. B. & Co.
Art Literature	A. M. & G.
Mother Goose Village.....	R. M. & Co.
Fables and Folk Stories.....	H. M. & Co.
Heart of Oak	Heath
Eskimo Stories	R. M. & Co.

Including second readers, review first grade work, and supplementary reading, the class ought to read ten books during the year.

The teacher should own for constant study the books for teachers named under the first year's work.

THIRD YEAR.

I. Review and perfect sound drill.

II. Read in review one second reader, beginning at opening of fall term.

III. Beginning with about the third month, the class should be able to read more and more for cultural values, and less and less for the mechanics of reading.

Material for the third year may be selected from the list here given. Six or eight, at least, should be read in class during the year.

It is advisable to dispense largely with graded readers from the beginning of the third year.

READING MATERIAL FOR THIRD YEAR.

Literature.

Child's Garden of Verses.....	R. M. & Co.
Book of Nature Myths.....	H. M. & Co.
Robinson Crusoe	P. S. Pub Co.
Gulliver's Travels Retold	A. B. C.
Norse Tales	R. M. & Co.
Fifty Famous Stories.....	A. B. C.
Fables and Folk Stories.....	H. M. & Co.

Geography.

Seven Little Sisters.....	Ginn
Each and All	Ginn
Art Literature	A. M. & G.
Around the World, II.....	Silver
Big People and Little People of Other Lands.....	
.....	A. B. C.

Nature.

Merry Animal Tales.....	L. B. & Co.
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History.

Stories of the Red Children.....	Ed. Pub. Co.
Great Americans for Little Americans....	A. B. C.

The list of reading material given includes geographical, nature, and history readers. In distributing the year's as-

signment, at least three books should be read having the literature basis; after that, history, geography, and nature readers may be used. The order of importance is indicated by the order of the words in the last sentence.

The teacher may also profitably use material selected by herself, clipped from periodicals like *Youth's Companion* and *St. Nicholas*, pasted on cardboard and passed around the class for reading.

The teacher should have for constant study one or more of the works on primary reading mentioned in the work of the first year.

Silent Reading.

One of the teachers' best opportunities first presents itself in this year through silent reading. Bring in, and encourage the children to bring in, good books and newspapers and magazines from home. If there is a public library in town do not fail to utilize it to the utmost for the reinforcement of the school. Take out a school card and keep in the school-room a constant supply of good children's books. Keep all this material where it can be served out to children for silent reading at times when they would otherwise be idle.

Occasionally allow two or three pupils to read to the class for a whole period out of a selection from this silent reading material.

RESULTS AT THE END OF THE THIRD YEAR.

Pupils should be able to read fluently practically any selection given them, suited to their age in thought.

FOURTH YEAR.

This year is usually a transition period between the primary and grammar schools. The reading will be much the same in purpose and method as that of the third year.

READING MATERIAL FOR FOURTH YEAR.

Literature.

Alice in Wonderland.....	MacM.
Little Lame Prince.....	Heath
Heart of Oak.....	Heath
Andersen's Fairy Tales.....	H. M. & Co.
Fifty Famous Stories Retold.....	A. B. C.
Thirty More Famous Stories.....	A. B. C.
Art Literature	A. M. & G.
Gulliver's Travels Retold.....	A. B. C.
The Nürnberg Stove	Ed. Pub. Co.

History.

Colonial Children	Heath
Stories of American Life and Adventure..	A. B. C.
America's Story	Heath
Four Great Americans.....	A. B. C.

Geography.

Seven Little Sisters.....	Ginn
Around the World, III.....	Silver
Colonial Life in New Hampshire.....	Ginn

Cut-up selections, as in third year.

Nature, history, and geographical reading, as in third year.

Silent reading, as in third year.

School Library.

It is not expected that any class can read all the books suggested under the third, fourth, and following years, nor could most boards afford to buy more than a few sets. But almost any board can afford to buy for the schoolroom, a complete list of single copies of the books named in the lists for years III to VIII, inclusive.

FIFTH YEAR.

Teach the use of the dictionary and hereafter require all but very unusual words to be looked up by the class for pronunciation and definition. *This work should not be left to the*

pupils in this year nor the next. The teacher should make a list of all unfamiliar words, which she desires the class to look up, in the next assignment, and place the same on the board. The class may be required to note the pronunciation, with proper diacritical marking, upon slips of paper and bring the same into class on the following day for pronunciation and definition.

Never assign a word for looking up without first finding out whether or not the pupils already know it, either all of them or some of them.

Never accept a dictionary definition without requiring the pupil to give another in his own terms.

Frequently vary the looking-up of the pronunciation of new words with an exercise in the diacritical marking of familiar words.

Continue silent reading as in the two preceding years. In this year the teacher may begin to discuss with children books read out of class. The chief aim of reading now is to develop in children a love for the best and the habit of reading at home and in the library.

Accumulate a school library. (See remarks under fourth year.)

Read not less than five of the following list of

READING MATERIAL FOR FIFTH YEAR.

Literature.

Wonder Book	H. M. & Co.
King of the Golden River.....	Ginn
Hiawatha	H. M. & Co.
Water Babies	Ginn
Arabian Nights	Ed. Pub. Co.; A. B. C.
Swiss Family Robinson.....	Univ. Pub. Co.
Robinson Crusoe	MacM.
Heidi	Ginn

History.

Ten Boys on the Road from Long Ago.....	Ginn
Story of the Greeks.....	A. B. C.
Story of the Romans.....	A. B. C.

Humane.

Black BeautyEd. Pub. Co.
A Dog of Flanders.

Nature.

The Jungle BookCentury
Lobo, Rag, and Vixen.....Scribners
Secrets of the Woods.....Ginn

Hygiene.

Emergencies Ginn

SIXTH YEAR.

Continue dictionary work as in the fifth year.

It is usually profitable in this year, in graded schools, to begin to read intensively some suitable piece of literature. For this purpose Longfellow's *Hiawatha* is recommended. The work should include, beside the reading, many compositions,—narrative, descriptive, imitative,—based on the literature. The poem should be illustrated and interpreted by the children through their drawing and by simple dramatics. (See history outline.) A whole term, if needed, is not too long a time to spend in this way, and such work would take the place of the rapid reading of several other books. Of course, other books might be read at the same time, alternating with the intensive reading.

Accumulate a school library. (See remarks under fourth year.)

READING MATERIAL FOR SIXTH YEAR.

Literature.

HiawathaH. M. & Co.
Tanglewood TalesH. M. & Co.
The Great Stone Face.....H. M. & Co.
Story of a Short Life.....L. B. & Co.

History and Citizenship.

Beginners' American History.....Ginn
Story of Our Country.....H. M. & Co.
Abraham LincolnA. B. C.

- Stories of the English.....A. B. C.
 Lessons for Junior Citizens.....Ginn
 Old Testament Stories.....Ed. Pub. Co.

Geography.

- Carpenter's North America.....A. B. C.
 Carpenter's Industrial Readers.....A. B. C.

Hygiene.

- Good HealthGinn

Nature.

- Ways of Wood Folk.....Ginn
 First Book of Birds.....H. M. & Co.
 Squirrels and Other Fur Bearers.....H. M. & Co.

SEVENTH AND EIGHTH YEARS.

Use of the dictionary may now be left somewhat more to the pupil, but the teacher is cautioned not to yield to the temptation to neglect this important part of the work.

The reading of these two years is more than ever centered on literary values. The historical and geographical reading is now provided for in the periods devoted to those subjects. The reading does not differ materially in its aim from that of the high school. The teacher is especially reminded that the class is reading to develop (a) a love for literature, (b) some acquaintanceship with the best literature, (c) some power of discrimination in the choice of literature. Therefore do not let the work degenerate into mere grammatical and etymological dissection.

See remarks on intensive reading under sixth year.

Accumulate a school library. (See remarks under fourth year.)

READING MATERIAL FOR SEVENTH AND EIGHTH YEARS.

Literature.

- The Man Without a Country.....L. B. & Co.
 Tom Brown's School Days.....Ginn

Evangeline	H. M. & Co.
Miles Standish	H. M. & Co.
Snow Bound	H. M. & Co.
Tales from Shakespeare.....	Ginn
Merchant of Venice	H. M. & Co.
Sketch-Book	Ginn
Vision of Sir Launfal.....	H. M. & Co.
Lady of the Lake	Ginn
Christmas Carol	Ginn
Tales of the White Hills.....	H. M. & Co.

Citizenship.

The Young Citizen.....	Heath
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Hygiene.

The Body at Work.....	Ginn
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Nature.

The School of the Woods.....	Ginn
Birds and Bees.....	H. M. & Co.
Sharp Eyes	H. M. & Co.

Geography.

Carpenter's Geography Readers.....	A. B. C.
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CHAPTER IV.

HANDWRITING.

FIRST YEAR—*First Part.*

Practice in writing should begin at the outset. All writing during the first term should be done at the blackboard and under the immediate oversight of the teacher. Pupils should not be allowed to use pencils during this term.

Arrange the class at the blackboard, compactly enough to permit the teacher to oversee all at once, but not so closely as to interfere with one another's freedom of movement. It is better that not more than ten write at once. Teach pupils how to hold chalk,—not like a pen, but between the thumb and fingers, the greater part of the chalk being inside the hand.

Begin with the copying of single words. Write the word which the pupils are to copy at the place where each is to stand, a little above the level of the children's eyes. Make the letters very round and as simple in form as possible. At the time of the exercise, first show the pupils how to write the word, and then require them to write it below the copy already written. Pass quickly from one to another, criticising, commending, and helping. Give but one direction for improvement at a time, and have the pupil carry that out before taking up any other point. Always erase the faulty exercise before it is rewritten, so that the pupil may always copy the correct form, and not his own faulty work. Make the exercise short, and require as much concentration of effort as possible.

After four to six weeks of these exercises, close each exercise by erasing the copy word after the pupils have written it several times, and let them try to write it from memory; and thereafter, close each exercise with this memory test.

After a few weeks, introduce short sentences on the slips. Not more than one new word should appear in a copy. Teach the use of capitals: first word in a sentence, names of persons and places, capital I.

FIRST YEAR—*Second Part.*

About the twelfth week, introduce writing at the seats. Never during the first year should the teacher leave pupils to accomplish the writing lesson by themselves. *Do not require pupils to copy from the blackboard.* Copying from the board, especially in the case of young children, requires a rapid change of focus, which is extremely harmful to the eyes.

Write each exercise on slips of paper, in round letters of good size. Use black ink. Make as many slips as there are pupils. Give each pupil a slip and sheet of paper. The pupils should use black pencils of large diameter and soft enough to make a black line without much pressure. The copy slip should be placed above the top of the paper and the word copied below. Then the pupils should place the copy slip over the word they have written, so as to cover it, and write the word again, and so on.

Continue the use of the copy slips throughout the year. In the latter part of the year, teach the pupils from copy slips to write their own names. Teachers should be careful to use themselves the same style of writing which they teach their pupils.

SECOND YEAR.

The writing should be continued from copy slips, as in the first year. Review the writing of pupils' own names and thereafter require the pupils' names to be written on all written exercises.

At the close of every writing exercise, remove the copy and require the pupils to write the same from dictation.

Give frequent drills in writing over and over short words like *and, the*, etc., which occur very often. This is as important as the sound drills in reading.

Note particularly that handwriting and composition or elementary language may frequently be combined to advantage.

THIRD AND FOURTH YEARS.

Continue practice in writing from copy and dictation. The copies should consist of entire sentences. Teach the pupils never to look from paper to copy in the middle of an effort, but to study the copy until they can shut their eyes and see it; and then strike it off with a single effort, afterward comparing the result with the copy, and trying to do better next time.

Give daily practice in writing over and over the short words frequently used.

Insist on the pupil's best effort in every written exercise of whatever kind. In a great majority of cases, teachers allow all they build up in the writing or composition or spelling exercise to be torn down in some other.

FIFTH AND SIXTH YEARS.

The constructive work of these years should be movement exercises. The problem is to cultivate muscular coördination until a good hand is written subconsciously. See the

Morse copy books.....	Silver
Medial copy books.....	Ginn
Rational copy books.....	A. B. C.
Practical copy books.....	A. B. C.
and especially	
Modern Business Penmanship.....	A. B. C.

The conservative work will be that referred to under third and fourth years, namely, insistence upon the best the pupil is capable of in every written exercise. A composition or examination paper is an exercise in penmanship only when the pupil is trying to make his handwriting the best possible.

Regular writing exercises beyond the sixth year are deemed to be unnecessary if the work of the first six years has been well done. If it is felt desirable to carry the work further the outline for years V and VI will serve.

Note particularly that it is no part of the business of the elementary school to produce elegant penmen. That belongs to technical training. The school fails, however, in so far as it fails to turn out pupils who can write a legible hand with a reasonable degree of speed.

CHAPTER V.

THE ENGLISH LANGUAGE.

INTRODUCTORY.

Under the above heading, only the language of the first two years and the composition of the last six years will be treated. Reading, in the main, spelling, handwriting, and grammar are outlined in other portions of the Program of Studies. But it should be remembered that all these are, properly speaking, language study, and that every other subject in the program is closely related to language study.

I. IMPRESSIONAL LANGUAGE.

In this one of the two great branches of language training, the mind is primarily receptive, and the course of mental activity tends from without inward. It is a vitally important side of the work, equally important with the expressional or composition side. Much of it is incidental, but the teacher cannot be successful unless she is willing to make it also systematic. At least three fourths of every well-taught lesson furnishes the time and topic and content for an impressional language lesson. All the reading is impressional language teaching. The teacher must also provide, especially in the lower grades, sufficient specific work along this line, especially in

Ear-Reading.

It is as important that pupils should be taught to be good listeners, or ear-readers, as it is that they should learn to grasp thought fully and accurately from the printed page. The good primary teacher must be a good story-teller, either naturally or by cultivation. She must train her pupils in listen-

ing to, and following, a selection read, a story told, or a topic briefly and cogently presented. The subjects employed for the purpose will naturally be varied in content, including topics from art, literature, current events, history, nature, geography, etc. When the topic is drawn from one of the first three, it will be given its own time in the language period. The regular recitation in history, geography, etc., furnishes the time and topic and content for an impressional language exercise, but the teacher must remember that she is teaching language as well as the other subject. (See *The Teaching of Any Topic.*)

In story-telling and oral presentation, the teacher should give especial care to the quality of her own English, as that will, consciously or unconsciously, be copied by her pupils.

FIRST YEAR.

During this year all stories, whenever practicable, should be illustrated by crayon sketches on the blackboard. The stories should be short, simple in structure, full of action, and of such a nature that their essential outlines will cling in the mind strongly enough to enable the child to reproduce them easily. Each exercise should consist of a complete, but brief story. For poetical selections, Stevenson's *Child's Garden of Verse* will serve as a type of the poems that are likely to appeal to children of this age. Good material may also be found in *The Land of Song*, Book I, published by Silver, Burdett & Co. The poems should be recited by the teacher to the pupils. The teacher should notice what poems appeal to them most and repeat these frequently. The children may learn these poems as memory gems. The pupils must never be required to learn a poem as a task.

When the story has been told, the exercise becomes one in expressional language or composition. The pupils reproduce the story in their own language, being led to use intelligently, so far as possible, whatever new words they have heard. During the first year the reproduction will be entirely oral.

SECOND YEAR.

During this year, the teacher will continue the story-telling of the first year, and will also begin the reading of stories to the class. Continue the reciting and learning of poems. In telling or reading stories, use a complete story for each exercise, as in the first year.

Test the pupils at the end of each selection, remembering that this part is both a means of discovering whether the pupils have correctly understood the selection, and also an exercise in expressional language.

The following list of books will be found to contain material of value to the teacher for the first and second years:

- How to Tell Stories to Children, Bryant.....
H. M. & Co.
 In the Child's World, Poulsson .Milton Bradley Co.
 Rainy Days and Sunny Days, Patch.....
Milton Bradley Co.
 Half a Hundred Stories for Little People.....
Milton Bradley Co.
 In Story Land, HarrisonSigma Pub. Co.
 Boston Collection of Kindergarten Stories.....
J. L. Hammett Co.
 The Story Hour, Wiggin.....H. M. & Co.
 Kindergarten Stories and Morning Talks, Wiltse..
Ginn
 Book of Nature Myths, Holbrook.....H. M. & Co.
 Myths and Myth Makers, Fiske.....H. M. & Co.
 Classic Stories for Little Ones, McMurry.....
Public School Pub. Co., Bloomington, Ill.

THIRD AND FOURTH YEARS.

During these years the impressional language work will be centered chiefly around (a) the regular reading, and (b) stories read by the teacher. The expressional side will take the form mainly of written reproduction. The pupils should be able to carry in mind a longer story, and in the reproduction manage several connected incidents.

FIFTH TO EIGHTH YEARS, INCLUSIVE.

During these years, the regular schoolroom work furnishes abundant material and exercise on the impressional side of language study. The only direction given the teacher is, that any lesson well taught is a good lesson in impressional language.

Continue throughout the learning of memory gems. If desired, in the last two years, this work may become the learning and reciting of short pieces of literature or extracts thereof as declamations.

II. EXPRESSIONAL LANGUAGE OR COMPOSITION.

As the impressional language study is both by eye and by ear, so the expressional is both oral and written.

The oral composition is found in the oral reproduction of the first four years, in the nature study of the same period, in the arithmetic of years III to VIII, in the geography, history, civics, physiology, and grammar of years V to VIII. *The teacher is cautioned that to neglect the oral recitation is to neglect one of the best opportunities for training in the use of the mother tongue, and that to allow slovenly recitations is to destroy in each of several daily exercises whatever gain has been made in the language exercise.*

Written composition is found in not only the regular language work, but also in every written paper, examination, etc., submitted by pupil to teacher.

FIRST YEAR.

Oral reproduction.

See directions on Impressional Language.

The first requisite for language is thought to be expressed. The ideas which are to serve as material for composition should be those furnished by the lessons in reading, in hearing stories told by the teacher, in the study of pictures and of nature. The teacher should so develop each of these lessons as to arouse thought actively in the minds of the pupils. This may be done by relating the objects studied to the chil-

dren's past experiences and observations and present interests, and by arousing their curiosity regarding the progress of the story told or read. The teacher will aim to secure from them:

(a) Speech sufficiently audible to be heard readily by all in the class.

(b) Correct pronunciation of all words. Correct the pupil's mispronunciation of words, requiring him to repeat the words correctly.

(c) Correct framing of sentences. Correct awkward or ungrammatical forms by giving the right form, requiring pupils to repeat it. Let the teacher repeat only the correct form and let pupils repeat.

Dramatization of stories by the children will be found one of the most useful means, not only of oral composition but also of general child development. The teacher who has never tried this form of training will do well to visit some school where it is done, and will find it less difficult than might naturally be expected. It appeals to powerful childish instincts.

SECOND YEAR.

Oral reproduction.

See directions under first year and under Impressional Language.

Dramatization.

See first year.

Copy and dictation.

These are important methods of language training in the early years. The copying can usually be done as seat, or busy, work; the dictation for a few minutes on reading time.

Written reproduction.

Begin about the middle of the fall term, soon after the copying of sentences is begun. (See Handwriting.)

During this year the written reproduction of stories previously reproduced orally, must be guided by the teacher. A

good way will be to place upon the board a few questions, the answers to which will be the main points of the reproduced tale.

Language forms.

At the end of the second year, the pupil should be able to handle readily: (a) capitals,—at the beginning of sentence, in proper names, and in first personal pronoun; (b) the period and the question mark at the end of the sentence.

CAUTION.—Do not rest content with the *belief* that the majority of the class are competent in this direction. Test your class, instruct, and test again, until you *know* that they are competent.

Illustration.

The written reproduction of this year may often be illustrated by paper cutting, drawing, etc. Consult the drawing teacher.

THIRD YEAR.

Do not attempt paragraphing until fifth year. Make each sentence a paragraph.

Oral reproduction.

As before, but more attention to connected presentation by pupil.

Written reproduction.

Continue work of second year. In place of the leading question outline of the second year, begin, by the middle of the first term, to place the outline of the story upon the board in suggestive words and phrases and require the pupils to write from this outline.

Original writing.

By the middle of the year, some original work may be begun. The choice of subject is the most important matter. Be sure of two points: (1) that the subject chosen is one upon which each pupil has something to tell; (2) that it is one in which each pupil has an interest. The daily lives of the pupils and the common experiences of the school will

furnish an abundance of subjects. Picture stories, in which subjects are suggested by penny pictures passed about the class, furnish some of the best material.

The subject chosen should be thoroughly talked up with the class and a board outline worked up before the pupils begin to write. This work, to be of much value, must be done in the schoolroom and in class time. It cannot be done as a home assignment.

Memory writing.

Have the class write from memory single stanzas of memory gems. This is as valuable from the cultural standpoint as from that of language training, but it is also one of the most valuable language exercises in the upper primary and lower grammar.

Illustration.

See second year directions.

Copy and dictation.

See second year directions.

Instruction.

Improvement in good use, in the selection of the best words, in the right management of phrases, paragraphs, etc., is a matter of growth and no specific directions can be given. At the best the class will not surpass its teacher in its command of language. Instruction will be based largely on the written work of pupils.

Allow no paper to pass uncorrected. If the teacher is unable to correct a large number of papers, then she should provide for only as many as she can properly correct.

After a written exercise, collect papers, mark all errors which the children can and should correct, and note errors which call for instruction. In marking corrections, note that there is an error, but do not indicate what it is. Before the next exercise, the pupils should rewrite papers, making corrections, and hand in their papers.

Using the errors commonly made by the class as a basis, the teacher will at the beginning of the next exercise give a

few minutes' rapid drill and explanation upon the correct forms.

In teaching the new language forms, use of capitals, punctuation marks, etc., a period should be set apart for black-board instruction and illustration by the teacher and drill by the class, using typical sentences.

Language forms.

At the end of the third year, the pupils should be familiar with the use of: capital at beginning of sentences, in names of persons and places, in the first personal pronoun, and in nouns of address; period and question mark at the end of sentences; apostrophe in possessives and common contractions; comma when *and* or *or* is omitted. Also with writing of *Mr.*, *Mrs.*, *Dr.*, *Rev.*, and *St.*; the names of days and months, and dates; and the correct use of *am*, *is*, and *are*, *was* and *were*, *has* and *have*. Require pupils to indent the first line and to write their names, school, and the date on each sheet.

CAUTION.—Do not rest content with the *belief* that the majority of the class are competent in their use of the above forms. Test, instruct, and test again, until you *know* that they are competent.

FOURTH YEAR.

Do not teach the paragraph until the fifth year. Each sentence should be in paragraph form.

Oral reproduction.

During this year more attention should be given to the serial reading of connected stories of some length. At the beginning of each exercise, the pupil should be questioned upon the substance of the last preceding reading.

Use reading time.

Written reproduction.

See directions under third year.

Themes.

See directions under third year, especially concerning choice of subject. Some attention should be given this year

to description, using familiar landmarks and portraits as subjects. The teacher will note that an important opportunity for training in observation is here opened.

Letter-writing.

Teach the conventional form of a letter, the writing of addresses, and the arrangement of envelope. The pupils should make practical use of this instruction at once by writing to friends, classmates, teacher, etc.

Memory writing.

See directions under third year.

Copy and dictation.

See directions under second year.

Illustration.

See directions under second year, but note that the pupils' reach and power in this direction should be widening and strengthening.

Instruction.

See directions under third year.

Language forms.

At the end of the fourth year the pupil should be familiar with the correct use of:

Language forms of preceding years; comma with appositives; quotations and quotation marks; the words *a, an, the, this, that, these, those, who, which, what, they, and them*; the plural forms of verbs and agreement of noun and verb; plural nouns in *s, es*, and plurals formed from singular in *y*.

Do not attempt to teach the grammatical principles underlying any of the above. Teach objectively, by concrete illustrations, and by requiring pupils using incorrect forms to repeat, using correct forms.

CAUTION.—Teach, test, and teach these forms until you *know* that your class is competent in them.

FIFTH AND SIXTH YEARS.

The reproduction exercises of the primary school are now more and more provided for by the oral and written work in

geography, history, physiology, etc. But the teacher is cautioned that every such exercise, whether she will or no, is an exercise in English, either impressional or expressional and usually both. Whether such exercise contributes to the building up or tearing down of the work in English will depend on the teacher's diligence, and vigilance in making the exercise one in the use of good English.

Paragraphing.

Hitherto, each sentence has formed a paragraph. The teacher will, at the beginning of the fifth year, teach the pupils to gather all the sentences relating to the same topic into one paragraph. The board outline should indicate the paragraph divisions.

Written reproduction.

Chiefly abstracts of portions of literature read. The capable teacher will make this work very profitable through its correlations with drawing. (See Illustration under third year.)

Themes.

The subjects of themes will still be largely experience narratives and descriptions of familiar objects and scenes.

In the preparation of the outline from the beginning of the fifth year the pupils should be taught to depend upon themselves more and more. The following devices are suggested:

(a) Select a pupil, for each new subject, to prepare an outline and submit the same to the teacher for criticism and correction. This may afterward be placed upon the board for the use of the class.

(b) Require each to prepare his own outline, and submit the same to the teacher for discussion and correction before writing.

Letter-writing.

Teach pupils to plan a letter, first deciding what they wish to tell, and noting their subjects on a bit of paper. Teach them to write to the point, to say what they have to say and

then stop. The special forms of letter to be studied will be:

(a) Invitations and responses.

(b) A letter renewing or terminating subscription to periodical.

(c) A letter applying for a position.

(d) Business forms to correlate with arithmetic of sixth year.

Letter-writing should be given a practical basis by having pupils correspond with pupils of similar grade in other places. This may be made especially valuable in connection with geography. Such letters will usually elicit a ready response from any part of the English-speaking world.

Memory writing.

Continue as a daily exercise throughout the fifth and sixth years. (See directions under preceding years.)

Instruction.

The principal language forms and principles of good use have been covered in the primary school. Instruction now becomes a matter of establishing the *habit of good use*.

The teacher will select from her first set of papers a group of two or three common errors and make a note of them. She will then emphasize that group in all her instruction and correction of papers patiently and diligently until those errors are rarely seen. Then, and not till then, she will select another group. *Drive home and clinch each nail as you come to it, if you never drive another.* Don't teach what you think your pupils ought to know; teach what their papers tell you they do not know.

Give few new subjects, but get out of each theme as much training as you can without staling. After the regular corrections have been made, select one paper and have it copied upon the board, word for word, mistakes and all. Have the class correct it minutely, sentence by sentence, and let a pupil write down the corrected form as fast as it is obtained, upon another part of the board. The next week, or two weeks after, take another pupil's work and so on.

Do not assign more written work than you can correct well. (See directions on correcting under third year.)

Papers written by pupils at home are usually worthless.

Do not require, or allow, long papers,—not less than a half-page, nor more than a page and a half, of ordinary composition paper.

SEVENTH AND EIGHTH YEARS.

The orderly and logical arrangement of themes in paragraphs continues to be the main line of constructive training. The larger part of the teacher's attention will, however, probably go to drill in the use of language forms.

Reproduction or the writing of abstracts should be dispensed with, except on rare occasions, after the end of the sixth year. To find a class doing little but abstract work in the upper grammar or high school may usually be considered evidence of lack of industry on the part of the teacher.

Themes.

The work of preceding years continued. See directions under fifth and sixth year work especially. When work has been well done by earlier teachers, both on the impressional and on the expressional side, it is not unusual to find some work in seventh and eighth years which has real literary merit. Under such conditions, it is indeed perhaps the exceptional class which does not show something of this sort. This quality should be sought out and encouraged in every possible way. The imaginative theme is perhaps one of the best ways

The imaginative theme may be:

(a) Simply a conventional short story. In this case, the teacher needs to guard against the mere reproduction by pupils of short stories in current literature.

(b) Some pupils can take literary masterpieces, study them, and work up imaginative imitations. Here, too, the teacher must guard against mere reproduction. The plot, for instance, may be substantially the same as that of the study, but, if the incidents and characters used in developing the scheme are different, then the result is an imitation and not

a reproduction. If, on the other hand, plot, incidents, and characters turn out to be the same as those of the study, but with perhaps different names, then the result is simply a reproduction. A great variety of imitations can be secured, and, for pupils of latent literary and artistic sense, this work is most valuable, and is apt to prove to be of absorbing interest.

The narrative and descriptive work of the preceding years should be continued.

In the seventh and eighth years considerable practice in extended working up of material should be given. This, however, would best be done on other than composition time and in connection with other subjects, history and geography particularly. Such a task should have for its object the gathering of material of real value to the class, and to carry out this purpose these essays should be read to the class and the class should be required to take notes and to be examined on the researches of their classmates. Such a theme should call for careful study, the looking up of references in encyclopedias, magazine articles, etc., the arrangement of material, and careful thought as to expression by the pupil. The pupil should not be allowed to make these essays mere abstracts of sources consulted; to avoid this, the pupil should be required to prepare his essay in outline and submit the same to his teacher from time to time for criticism and correction. Finally, the essay should be written in the schoolroom, wholly from outline and notes.

Letter-writing.

Continue practice of fifth and sixth years, including correspondence. Do not limit the latter to New Hampshire or our own country. Letters should go to all parts of the world.

Instruction.

See directions under preceding years. In the seventh and eighth years, the teacher will have increasing grammatical insight on the part of pupils as an instrument of criticism.

For illustration, correction, length of themes, etc., see preceding years, III to VI.

CHAPTER VI.

SPELLING.

It should be remembered that the development of good spellers is a process of growth, like the rest of education, and not merely a process of adding word by word to the pupil's store of correct words. It rests heavily upon at least three bases: first, the selection of words to be studied; second, the method of teaching the original lesson; third, the frequent iteration of difficult words.

I. SELECTION OF WORDS FOR STUDY.

The campaign of developing good spellers must be fought out step by step like other campaigns, each step perfected before the new one is taken. Beginning with the third grade, the teacher must make it her main purpose to see that the child handles correctly those words which he commonly uses at his present age.

Therefore, select as spelling lessons the common words which the class misspells in language papers.

About once in two weeks in years III to VI, once a month in years VII and VIII, give a test,—an unprepared lesson,—of from twenty to fifty words according to year. Each time note the proportion of misspelled words, and thus gain a rough estimate whether you are gaining or losing. After each test, the misspelled words should be gathered into the teacher's notebook for further lessons and study.

As the class goes up through the grades, it will probably be found that fewer and fewer words are misspelled in language papers and other work, and that the stock of words available for lessons is consequently growing less. Then and not till then may the teacher venture outside this *circle of use* for the study of rules in the two upper grades and for the study of the less commonly used words.

Above all, never select a word simply because you think the children ought to know it. Watch the papers; they will tell you what the class ought to study.

II. INSTRUCTION.

The basis of instruction in spelling is the formation of clear and accurate memory images of words. There seem to be four forms in which a word is imaged to the mind: first, as a seen object; second, as a heard object; third, as certain feelings in throat and mouth peculiar to the utterance of that word; fourth, as a written object. For convenience, let us call them the visual, the auditory, the vocal, and the motor images.

The problem then comes to be to so present these images that the necessary associations between them will be formed, and in such wise that one reinforces the other.

OUTLINE FOR A LESSON.

I. Leave the lesson which is to be studied on the board for an hour or two, at least, before taking it up,—each word in syllabic form.

In studying the lesson with the class, it is probably best to place the words on the board, in *syllabic* form, one at a time, for the sake of the greater concentration of attention.

II. As each word appears on the board before the class, have the whole class look closely at it for a moment and then call several children to pronounce, spell, and pronounce very distinctly,—always observing the separation into syllables. Finally, have the class together pronounce, spell, and pronounce each word.

Great care should be taken with the pronunciation, seeing to it that each syllable has its full value, even to the point of exaggerating the sounds of the various vowels and consonants.

III. Make sure of the understanding of each word before it is finally given.

IV. Have the lesson written from dictation as soon as it has been thoroughly studied. And note that this writing is merely rounding out and fixing the day's instruction,—the setting of the motor image; it is not a test, except of the closeness of the pupil's attention and of the force with which the teacher has presented the lesson.

V. Repeat all lessons in which the class misspells more than five per cent of the gross total of words given.

Do not take more than fifteen minutes for the complete exercise, including the writing. Five to eight minutes for all except writing is sufficient. Give four to six words to a lesson in year III; five to eight in years IV and V; ten in years V to IX.

Spelling matches are an excellent method of review.

CHAPTER VII.

GRAMMAR.

In the constructive language work, the aim is to train the pupil to the adequate expression of his own thoughts. In the study of grammar, the mind is concerned with the analysis of thought already expressed either by the self or by others. The mental attitude of the student in the one subject is the reverse of that in the other. For this reason these two forms of language work (the constructive and the analytic) should not be combined in the same exercise. The first is concrete, the second abstract; both forms of training are necessary to the well-ordered and efficient mind. But the abstract is valueless unless based on several years' effective work in the concrete.

This chapter is a statement of the grammatical knowledge which it is deemed desirable that a pupil should have on completing the elementary school rather than a teaching outline. Teachers will commonly use a text and will follow the outline therein.

All portions of any text which deals with logical subtleties or mere grammatical cataloguing should be omitted, such for instance as the difference between copulative and substantive verbs, coördinate and subordinate conjunctions, cognate objects, weak and strong verbs, and the like.

The teacher should keep constantly in mind the main object of the teaching of grammar, namely, to put the pupil in possession of a power by which he may know the difference between correct and incorrect speech.

SEVENTH YEAR.

I. Study of the sentence.

1. Form,—declarative, interrogative, imperative, exclamatory.

2. Subject and predicate,—simple and complete.
- II. Parts of speech.
 1. Practice in identifying same until pupils make few, if any, mistakes.
 2. Nouns,—common, proper, collective.
 3. Verbs,—transitive and intransitive, active and passive.
- III. Sentence study continued.
 1. Modifiers of subject and predicate.
 2. Phrases and modifiers.
 3. Verb forms,—infinitives and participles and use in the sentence.
 4. Simple, compound, and complex sentences.
 5. Clauses and their uses.
- IV. Analysis of sentences.

Constant practice from the first in analysis. Toward the end of the year the pupil should be able to analyze any ordinary grammatical sentence.

A good method of diagraming will prove to be a great help in enabling pupils to visualize the construction of sentences.

EIGHTH YEAR.

Review seventh year work with much practice in analysis.

I. Systematic study of parts of speech.

1. Nouns.
 - a. Gender,—masculine, feminine, common, neuter.
 - b. Number,—singular and plural—rules for formation of number—peculiarities of number.
 - c. Person.
 - d. Case,—nominative, possessive, and objective—appositives—nominative independent and absolute—formation of possessive—objective indirect and indirect object and prepositional object.

- e. Declension with practice.
- 2. Pronouns.
 - a. Personal, demonstrative, indefinite.
 - b. Alternative, interrogative, relative.
 - c. Declension with practice.
- 3. Adjectives.
 - a. Descriptive, demonstrative, numeral.
 - b. The articles.
 - c. Comparison.
- 4. Verbs.
 - a. Transitive and intransitive.
 - b. Voice, mode, modal auxiliaries,—tense, person.
 - c. Verbal nouns.
 - d. Conjugation with practice.
- 5. Adverbs.
 - a. Simple, interrogative, relative.
 - b. Comparison.
- II. Parsing with much practice.
- III. Use as determining part of speech.
- IV. Practice in analysis and parsing.

CHAPTER VIII.

ARITHMETIC.

In the teaching of arithmetic, two main ends should be kept in view (a) proper mental training, and (b) such power of efficient calculation as the ordinary concerns of life call for. The teacher, or superintendent, whose view is single to the first end is apt to turn out pupils at the end of the common school course who cannot grapple with the ordinary arithmetic of business. He who thinks only of the second usually succeeds in developing merely a limited mechanical facility in some few processes easily forgotten and incapable of adjustment to strange applications.

School boards are especially cautioned that good results in arithmetic are not proportioned to prolonged study of the subject, but rather to skillful teaching. The first six years of school life are ordinarily sufficient for all the arithmetic needed, except for special service like banking; eight years are allowed.

It will ordinarily be necessary to use a series of arithmetics, and the outline of the series in use will be followed. An outline is here given for the purpose, mainly, of indicating the work which should be accomplished, year by year. School boards are advised seldom to change the text-books in use in this subject. Some of the books in use many years ago are still better guides for the average teacher than most of the newer books, admirable as the latter may be under competent expert supervision.

RESULTS.—At the end of each year, beginning with the third, the class as a whole should be able to show a total general average of at least seventy per cent on examinations covering all work outlined.

I. Number space objectively to 10.

Teach in the following order: 1-2-4-8-3-6-12-9-5-10-7. This will give opportunity to teach by grouping and the use of the primary relationships at the same time. Paper cuttings, blocks, splints, and other objects may be used. Teach names and figures, and teach children to write figures. Do not teach counting; pupils should have picked it up by the time 10 is taught. Teach 4 as 2 2's; 8 as 2 4's, etc. Pupils should be taught to recognize groups as high as 5 without counting.

II. Combinations and relations of numbers.

Do not allow the children to learn by rote. If the work of Part I has been well done, they will not. The class may be drilled upon the combinations and relations after they have been learned objectively. If a pupil hesitates, require him to rediscover the answer by the use of objects.

Part II should be illustrated with simple concrete work or problem. In this connection, teach the inch, foot, and yard.

RESULTS.—At the end of the year, the pupil should know the number space up to 10; that is, the forty-five combinations by addition with the complementary subtraction; should be able to apply them in concrete illustrations; should know the fractional parts $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$; and should be able to recognize and to estimate the length of the inch, foot, and yard.

The teacher will find valuable suggestions in the following books:

Belfield & Brooks' Rational Elementary Arithmetic	
.....	S. F. & Co.
Hall's Arithmetic Primer.....	A. B. C.
Smith's Primary Arithmetic.....	Ginn
Arithmetic for Beginners.....	Heath
Course in Arithmetic....	N. H. Educational Council
Arithmetical Games.....	Cincinnati Game Co.
Speer's Arithmetic, Teachers' Manuals.....	Ginn

SECOND YEAR.

I. Numbers reviewed and extended to 24, as in first year, but not all combinations or relationships. Practice same with perception cards for a few minutes each day throughout the year.

II. Counting objects.

III. The multiplication tables.

On no account should the tables be learned by rote or in the abstract. The pupils should build up the tables by process of objective discovery, following the lines laid down under first year work. For instance, the table of 4's may be built up by laying groups of 4's, thus:

$$3 \times 4 = \left\{ \begin{array}{l} 1111 \\ 1111 \\ 1111 \end{array} \right. = 12.$$

The tables are, however, valueless unless they are memorized. Accordingly, as fast as they are constructed, they should be committed to memory. In drilling on tables, whenever the pupil is at fault, he should be given objects and required to find the right answer for himself.

IV. Practice in reading and writing figures not higher than 1,000.

V. Denominate units of the first year reviewed and liquid and dry measure units, and United States money, taught in the same way. (See notes on first year.)

Roman notation in learning to tell time by the clock, and in learning to read the numbers of chapters.

Work should constantly be illustrated by concrete examples, as in the first year.

RESULTS.—At the end of the second year, the pupils should know the fractional parts, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc., up to $1/12$, and should be able to apply them concretely; should know the multiplication tables through the 7's; and should be able to recognize and estimate the denominate units taught.

THIRD YEAR.

I. The multiplication tables reviewed, completed, and drilled.

The tables should first be taught with a view to the maximum of mental growth. The problem then becomes one of making them an efficient tool for further study. The pupil must be drilled in their use, mainly by the help of perception cards, until he responds instantly, automatically, upon seeing or hearing a combination of numbers from the table. Future capacity for arithmetical work will depend largely upon thoroughness in this work.

Exercises with perception cards should be given daily for a few minutes throughout the year.

II. Notation and numeration.

III. (a) DAILY PRACTICE IN RAPID CALCULATION; (b) simple operations in addition, subtraction, short multiplication, short division.

This work should constantly be illustrated and assimilated through simple problems. In the selection of problems, aim to secure those which deal with quantities and conditions familiar to the common experience of children of this age.

Illustrations.

Find out at home or from your neighbor how much hard coal is required to supply some furnace or stove for one month. At the current price of coal, how much will it cost to supply this stove for one month? For the six cold months?

Let the pupils make a list showing the current prices of provisions. Out of this material, make and have the pupils make a great variety of problems.

Bear in mind (a) that all work should be done mentally and without paper if possible, that written work should be done only when unwritten work is impossible; and (b) that no problem, either mental or written, should be allowed to pass without explanation by the pupil.

IV. Use of fractions already learned in simple operations

in addition and subtraction. Visualize all this work with fractions.

V. Denominate units reviewed and constantly used in problems.

Teach the units of square measure in connection with multiplication.

RESULTS.—See preliminary note.

References.

See lists of first year. For some of these works it will be necessary to choose the second in the series. Also

Southworth-Stone Arithmetic.....B. H. S. & Co.

FOURTH YEAR.

I. Daily exercises of a few minutes each.

(a) RAPID CALCULATION, using all previous work as a basis.

(b) The multiplication table.

(c) Notation and numeration.

II. The fundamental processes reviewed. Multiplication and division completed.

As in the third year, this work should be illustrated and assimilated by the solution of simple problems. See notes on problems under third year work. Such problems as those given there will be suitable, and problems like the following:

How many square feet in the floor of the schoolroom? How many board feet? Find the cost of the floor, teacher supplying the necessary data.

A room is well lighted when the floor space is not more than six times the window space. Is your schoolroom well lighted? your hall? your room at home?

Let the pupils plan to furnish a dining-room and figure the cost.

Many additional practical problems can be found in the work of gardening, if the school has a garden. Some simple processes like *average* may be taught incidentally in connection with problems.

III. Continue third year work with fractions and denominate units. Have pupils do many actual measurements with the latter in determining data for problems.

RESULTS.—At the end of the fourth year, the pupils should know the following so thoroughly that it will never be necessary to take them up again:

(a) The multiplication tables and all combinations involving simple addition and subtraction.

(b) The processes of addition, subtraction, multiplication, and division.

(c) Notation and numeration of integers.

(d) The tables of linear, liquid, dry, and square measure, and United States money, using only the units which are within the comprehension and management of the pupils.

See:

Rational Grammar School Arithmetic, pp. 4-7,
11-18S. F. & Co.
McLellan & Ames' Public School Arithmetic for
grammar grades, problems scattered through the
first 100 pagesMacM.

FIFTH YEAR.

I. DAILY EXERCISES IN RAPID CALCULATION, using all the work done in preceding years as a basis.

II. First half-year.

Common fractions: reductions and four processes. Teach only operations with small numbers. Fractions with large terms seldom occur in practice and they are confusing to the beginner. Teach least common multiple and greatest common divisor in connection with fractions, using only such expressions as can be solved by inspection. Do not teach the long processes of either at this time.

Second half-year.

Decimal fractions: notation and numeration, reductions, four processes, and relations between common and decimal fractions.

Problems should constantly be based upon data secured by pupils (a) at home and about the schoolroom and school grounds; (b) in connection with handwork, school gardening, and geography. A large measure of the teacher's success will depend upon her ability to supply and suggest problems of this sort.

The teacher is again reminded that all problems should be solved without pencil and paper whenever possible. The teacher should also remember that problems exist for the sake of arithmetic teaching and not arithmetic teaching for the sake of problems.

RESULTS.—See preliminary notes.

SIXTH YEAR.

The sixth year is devoted largely to what has commonly been known as business arithmetic. Much of the work treated under this head in text-books, both ancient and modern, is obsolete in the world of every-day business. The common school should train pupils with sufficient arithmetic to meet the demands of ordinary business. They should not attempt to produce bank clerks, actuaries, expert accountants, etc.

I. DAILY EXERCISES IN RAPID CALCULATION based upon all previous work.

II. Common and decimal fractions reviewed (12 weeks). Teach the pupils to manage somewhat more difficult fractions than last year. Teach factoring and the long processes of greatest common divisor and lowest common multiple. Give constant practice in the notation and numeration of decimals; this is one of the points on which pupils most frequently fail in the high school.

III. The application of decimals to (a) percentage; (b) profit and loss; (c) simple interest; (d) trade discount.

See notes on problems under all preceding years. Problems must be made as practical as possible. It is futile to hope to train pupils in the grammar school for all the applications of arithmetic to business purposes. Much incompetency in arithmetic has happened on this account. See that pupils are well grounded in the fundamentals and the applications will take care of themselves. If a pupil thoroughly understands percentage, it will not take him long to master the simple arithmetic of taxes when he needs to. If he is hazy on percentage he will never be able to understand any of its applications.

Teach pupils to bill accounts and to draw checks and promissory notes.

Good collections may be found in:

- Smith's Grammar School Arithmetic.....Ginn
- Winslow's Natural Arithmetic, III.....A. B. C.
- Rational Grammar School Arithmetic..S. F. & Co.
- McLellan & Ames' Public School Arithmetic for
Grammar GradesMacM.
- Sensenig & Anderson's Introductory Arithmetic..
..... Silver
- Southworth & Stone's Arithmetics..B. H. S. & Co.
- Southworth's Problems in Arithmetic.....
..... B. H. S. & Co.
- Hall's ArithmeticsA. B. C.
- Nichols' Arithmetic, V and VI.....T. B. & Co.
- Walsh's New Grammar School Arithmetic...Heath
(Good for large number of civil service and public
school examination papers.)

RESULTS.—See preliminary notes.

At the end of the sixth year, pupils should know finally, in addition to that already laid down under fourth year, all simple operations in common and decimal fractions. It will not do for the teacher to estimate the ability of the class; her knowledge should be a matter of examination. (See Tests and Examinations.)

SEVENTH YEAR.

I. RAPID CALCULATIONS AS IN PREVIOUS YEARS.

II. Review of percentage and its applications.

III. Bills, notes, and other business paper and single-entry bookkeeping.

IV. Compound numbers (second half-year).

Reductions and four processes. Problems under principles enunciated for previous years.

RESULTS.—See preliminary notes.

EIGHTH YEAR.

I. RAPID CALCULATIONS AS IN PREVIOUS YEARS.

II. Mensuration.

No part of arithmetic is more useful than this. It is of the greatest practical utility, and at the same time is richest in educational values. It is perhaps the best introduction to the geometry of the high school. As in other years, the daily life and experience of pupils should be levied upon extensively for data for problems.

The following lines of exercises are suggested:

Height of buildings, towers, trees, etc.

Distance between points mutually inaccessible in a straight line, as distance across a small pond or through a building.

Areas of plane figures,—triangles, quadrilaterals, polygons, circles.

Surface and solid contents of prisms, pyramids, cylinders, cones, and spheres.

Ratio and proportion and square root should be taught in connection with mensuration as the need of the use becomes evident.

In connection with compound numbers, teach the metric system. Do not teach the relations between the metric and the English system until toward the end, and then merely show the pupils where and how they can look up the relation. Do not require them to burden their memories with the numerical relations. Teach pupils to recognize and estimate metric units precisely as they did English units in the first year.

III. General review (second half-year).

For this purpose, it is well to divide the entire course up into a series of topics, twenty-five or thirty, and proceed by a series of tests, pausing for instruction on those only in which the general average of the class falls below some arbitrary standard, say ninety per cent.

General references on teaching arithmetic:

- Smith: Teaching of Elementary Mathematics..... MacM.
.....
McMurry: Method of the Recitation..... MacM.
Teachers' College Record, Vol. 4, No. 2.....
..... Columbia Univ. Press
McLellan & Dewey: Psychology of Number.....
..... Appleton

CHAPTER IX.

GEOGRAPHY.

Geography is continuous with the nature study of the four primary years and is at the same time the basis of the geology and astronomy, the physics and chemistry, of the high school. Good work in the geography of the grammar school will be conditioned largely on the broad apperceptive mass accumulated in (a) the kindergarten and nature study of the earlier school years and (b) in the out-of-school experience of the child. Just in so far as (b) is weak,—as almost always in the cases of town and city children,—so ought (a) to be especially strong. Ability to assimilate science teaching in the high school period will depend largely on the character of the work done in the geography of the grammar school.

The character of geography.

Before all else teachers and school boards are cautioned that geography is a subject to be *understood* as dealing with related series of cause and effect, and not a collection of facts to be *memorized*. Geography is closely related to other school subjects, and the capable teacher will correlate her teaching of geography with that of reading, composition, history, and handwork especially.

Apparatus for objective teaching.

Just as high school science cannot properly be taught except by use of the laboratory, so pupils can gain little comprehension of geographical facts and principles except through actual experience of the concrete facts.

The first requisite is time and ability and permission to conduct excursions of the pupils in the fields and woods, by

brooks and rivers, the lake shore and seaside, over hills and mountains, and through valleys; and to the seats of the varied industries of the state.

The apparatus needed for the schoolroom can mostly be improvised by the teacher, but the following should be provided: (1) Maps in abundance, preferably without names of localities and surface features. The maps of the text-books should furnish all needed information as to names. Maps in text-books should be clear and especially should multiplication of detail be avoided. (2) Illustrative material of all sorts, including samples of industrial products, photographs, clippings from periodicals, government reports and bulletins. This department will from time to time issue bulletins, showing lists of the last named which are available for school use. The school board should each year set aside a sum of money for the accumulation of such illustrative material. If possible a stereopticon or *porte lumière* should be provided for each building, with lantern slides. (3) A few good globes; ordinarily a single globe for each room will suffice; a spherical blackboard for each building would be useful.

Correspondence.

A valuable adjunct to the illustrative material named above will be correspondence with pupils of similar age and grade in other towns of this state, in other states, in the English-speaking foreign countries. Letters addressed to Holland, Belgium, the German empire, and France will usually call forth answers. They should be addressed to local superintendents of schools in this country, or to school directors or inspectors in other English-speaking lands. Letters should deal largely with descriptions of home industries and history and customs, and wherever possible should enclose photographs illustrating the same.

Time allowances.

In order to indicate right proportions, each topic is credited with a certain number of weeks in a year of thirty-six weeks. When the length of the year is other than thirty-six weeks, time allowances must be proportionately reduced. No allowance is made for review, since *every lesson should be a review*.

FIFTH YEAR.

I (8 weeks). Study of soil, hills, mountains, brooks, rivers, lakes, the air and ocean, industries, and government.

II (2 weeks). Geography of the schoolroom, school grounds, and city or village. Maps should be made of each of these four units and the children taught to draw to scale.

III (2 weeks). The earth. Continents and oceans, the zones and their boundaries.

IV. The world as a whole.

1. (18 weeks.) The United States by groups of states.

2. (2 weeks.) The countries in North America north and south of the United States.

3. (4 weeks.) South America, Europe, Asia, Africa, and Australia.

(I) Take several excursions. Have children bring into the schoolroom samples of different soils, showing as far as possible process of formation. Hills, mountains, brooks and river valleys, and lake basins should be studied at the sand table. Movements of air and water may be illustrated by noting the effect of heat on each. The character of the air as a real body occupying space should be demonstrated. Industries and government may be illustrated from local industrial plants and study of home, county, state, and national governments, naming the persons holding office.

(IV) The study of the world as a whole is designed to give merely a superficial view. It should cover (a) physical features, (b) peoples, (c) industries and products, (d) government. Each country studied should be mapped by pupils, and especially should the relation of cause and effect in the growth of cities and industries be emphasized.

See preliminary notes on apparatus and illustration.

Letter-writing.

Continue weather records of nature study.

Reading for pupils.

Brooks and Brook Baisins.....Ginn

Geographical Nature Studies.....A. B. C.

How We Are Fed.....	MacM.
How We Are Clothed.....	MacM.
Glimpses of the World.....	Silver
The Frozen North.....	Heath

SIXTH YEAR.

I. The earth.

1. (2 weeks.) The earth's movements, daily and annual, —succession of day and night and change of seasons.
2. (3 weeks.) Winds and ocean currents.
3. (2 weeks.) Distribution of temperature and climatic conditions.

II. North America—intensive study.

1. (2 weeks.) Physiography, including elementary geological development, plant and animal life.
 2. (6 weeks.) The New England States.
 3. (3 weeks.) The Middle Atlantic States.
 4. (3 weeks.) The Southern States.
 5. (3 weeks.) The Central States.
 6. (3 weeks.) The Western States.
 7. (3 weeks.) Territories and dependencies of United States.
 8. (3 weeks.) Countries north of United States.
 9. (3 weeks.) Countries south of United States.
- See notes under fifth year and preliminary notes.

(I) All lessons must be completely illustrated and demonstrated objectively, both by teacher and by pupil.

For section 1, globes are not essential but useful. A single good globe in the hands of the teacher should be sufficient. For purposes of demonstration by pupils, simple balls are full better than globes. The work under this section should not be considered done until every pupil can take a ball representing the earth and place it at command in the proper position to represent any annual or diurnal phase.

For section 2, some easily controlled source of heat, such as a lamp or an oil stove, will serve all purposes.

For section 3, outline maps are needed. Pupils should be

sent to the wall map and required to predict from elevations and relation to ocean, what the climate of different sections of land mass will be.

(II) The objects of teaching are outlined under fifth year, namely, (a) physical features, (b) peoples, (c) industries and products, (d) government. To these may be added (e) commerce and lines of transportation. The controlling general purpose should be relation of cause and effect, showing the reason for the existence of towns, cities, industries, etc. Double time is allotted to the study of the New England States, and they should be studied thoroughly for the sake of the typical instances they contain. The location of Boston, Bangor, Concord, and Manchester and Dover, once well understood, will explain the greater part of the rest of the country, and indeed of the whole world.

Current events daily.

Letter-writing, as in the fifth year.

Weather record continued.

Reading for pupils.

Fifth year books; also

Carpenter's North America.....A. B. C.

Our Own Country.....Silver

Tarr and McMurry's Supplement for New England
..... MacM.

The Land We Live In.....L. & S.

The Western United States.....Heath

Alice's Visit to the Hawaiian Islands.....A. B. C.

Hawaii and Its People.....Silver

Our American Neighbors.....Silver

Porto RicoSilver

SEVENTH YEAR.

I. The earth.

1. (3 weeks.) Movements of earth, and of air and ocean currents thoroughly reviewed.

2. (2 weeks.) Latitude, longitude, and time.

3. (1 week.) Light zones and heat zones.

4. (1 week.) Weather maps.

II. South America and Europe—intensively.

1. (1 week.) Physiography of South America, and plant and animal life.

2. (2 weeks.) Brazil.

3. (2 weeks.) Argentina.

4. (1 week.) Uruguay and Paraguay.

5. (2 weeks.) The Guianas and Venezuela.

6. (1 week.) Colombia, Ecuador, Bolivia, and Peru.

7. (1 week.) Chile.

8. (1 week.) Physiography and plant and animal life of Europe.

9. (3 weeks.) The British Islands.

10. (1 week.) Holland and Belgium.

11. (3 weeks.) The German Empire.

12. (3 weeks.) France.

13. (1 week.) Spain and Portugal.

14. (2 weeks.) Austria and Italy.

15. (1 week.) Turkey, Greece, and the Balkan States.

16. (3 weeks.) Russia.

17. (1 week.) Norway, Sweden, and Denmark.

(I) Numerous examples in latitude, longitude, and time should be given. Arithmetic time can be used for this purpose.

Light zones and heat zones should be distinguished. Give some practice in plotting isotherms from data supplied by the daily weather map.

Weather maps may be obtained daily by mail on application to the weather bureau authorities. Children should be taught to read them and to observe the daily changes of weather as predicted from the weather maps.

(II) See preliminary notes and notes on fifth and sixth year work. An excellent plan for the treatment of Part II is to imagine that teacher and pupils are to make a journey to and through the lands which are studied.

Letter-writing continued.

Weather record daily throughout the year.

Geographical themes. See chapter on composition for seventh and eighth years. Pupils may be assigned special topics to be worked up and presented to the class. The class should usually be examined on what has been read to them.

Reading for pupils.

South America	A. B. C.
Europe	A. B. C.
Geography of the British Isles.....	MacM.
King's Geography Readers, Book VI.....	L. & S.
Modern Europe	Silver
Northern Europe	Ginn
Footprints of Travel.....	Ginn
Boyhood in Norway.....	Scribners

EIGHTH YEAR.

I. Thorough review of the physical geography of the fifth, sixth, and seventh grades, comprising:

1. (1 week.) Soil.
2. (2 weeks.) The glacial period and its effects.
3. (2 weeks.) Rivers and river valleys.
4. (1 week.) Lakes, the ocean, and coast lines.
5. (2 weeks.) The air and the ocean, and their currents.
6. (1 week.) Rainfall, storms, and climate.
7. (1 week.) The movements of the earth—the earth in space.

8. (1 week.) Light and heat zones.
9. (2 weeks.) Latitude, longitude, and time.

II. Asia, Africa, and Australasia—intensive study.

1. (2 weeks.) Asiatic Turkey, Persia, and the Anglo-Russian buffer states.

2. (3 weeks.) The Indian Empire.
3. (3 weeks.) The Chinese Empire and Siberia.
4. (2 weeks.) Japan and Korea.
5. (2 weeks.) Africa.
6. (2 weeks.) Australia.

7. (2 weeks.) The oceanic islands of (a) the Pacific, (b) the Atlantic.

III (7 weeks). General survey of world with special reference to the trade relations of each country with the United States.

See preliminary notes and notes on fifth, sixth, and seventh years.

Weather record daily.

Current events daily.

Geographical themes.

Reading for pupils.

Asia	A. B. C.
Reader in Physical Geography.....	Longmans
Australia and the Islands of the Sea.....	Silver
Australia, Our Colonies and other Islands of the Sea	A. B. C.
Life in Asia.....	Silver
Two Girls in China.....	Silver
Views in Africa.....	Silver

Books for teachers of geography.

A Teacher's Manual of Geography, McMurry.....	
.....	MacM.
Complete Geography, Tarr and McMurry.....	
.....	MacM.
Commercial Geography, Adams.....	Appleton
Lessons in Home Geography, McMurry.....	MacM.
New Physical Geography, Tarr.....	MacM.
Special Method in Geography, McMurry....	MacM.
Stoddard's Lectures.	
Teacher's Manual of Geography, Redway....	Heath
Topics in Geography, Nichols.....	Heath
The World's Great Farm, Gaye.....	MacM.
Physical Geography, Davis.....	Ginn
The Story of Our Continent, Shaler.....	Ginn
Type Studies in the Geography of the United States, McMurry	MacM.

CHAPTER X.

PHYSIOLOGY AND HYGIENE.

The laws of New Hampshire, chapter 92, section 6, require that instruction in physiology and hygiene, with special reference to the effects of narcotics and stimulants upon the human system, shall be given in all graded schools above the primary.

The following outline is given to indicate the scope and method of treatment in each of the four years of the grammar school program. It is presumed, however, that suitable text-books will be selected. The department recommends the use of a graded series of texts for the four years rather than any one text. The Gulick series, Ginn, is one of the best.

Provision is made for two or three lessons per week throughout the four years. The subject is a good elementary science, and, in addition to its great practical value, furnishes a valuable introduction to the biological sciences of the high school.

Teachers and school boards are reminded that no science can be properly taught except on the basis of observation and experiment. For this purpose, instruction in physiology requires no laboratory and no expensive material. Nearly everything from a bone to the eye and even the brain can be illustrated by material obtainable from the butcher. On the other hand, the zealous teacher should be wise in the method of illustrating, and especially should be on her guard against experiments or illustrations beyond the power of pupils to comprehend and assimilate.

The object and purpose of the study is hygiene rather than anatomy and physiology. The pupils should be taught just

enough of the last two to enable them to understand the first. Instruction in the art of right living is perhaps the most important practical duty of the elementary school.

The teacher who has had no higher courses in biology should prepare herself by the careful reading of Martin's *Human Body*, Henry Holt & Co., or a text of like grade.

From the hygienic standpoint, the teacher should see that her name is on the mailing list for bulletins of such boards as the State Board of Health. She will also find the entire Gulick series referred to above to be most useful reading material; also "Preventable Diseases," by Woods Hutchinson, H. M. & Co., which ought to be in every public library; also "Civics and Health," Allen, Ginn.

Teachers in all years and at all times should hold themselves responsible to seize opportunities for impressing lessons in the proper use and care of the body,—lessons of cleanliness, of good sanitation at home and at school, on the prevention of colds, etc.; on proper position and carriage; care of the teeth, eyes, and ears. The practical results will depend full more upon the hygienic control of the school and the teacher's own good example than upon the regular instruction. For instance, the tactful and persistent teacher will be able not only to teach cleanliness, care of teeth, etc., but also to secure in her pupils the practice of these desirable personal virtues. Again, a lesson on fresh air is lost if given in a stuffy and overheated schoolroom, which a little exercise of intelligence and industry might convert into a reasonably suitable room.

FIFTH YEAR.

The skeleton. Parts: the skull, spine, ribs, bones of limbs; how the bones are joined together; how the joints work.

The muscles. Use; connection to bones; action—by contraction and relaxation; difference between muscles and fat.

Digestion. The purpose of digestion; the course of food after it enters the mouth and until it is taken up into the blood, explaining the position and appearance of mouth, gul-

let, stomach, and intestines,—without going into details of processes.

The blood. What the blood is for; the different kinds of blood vessels and how the appearance of the blood in them varies.

Respiration. The lungs and their appearance; the great diaphragm muscle; how we breathe; why we breathe; the windpipe and its relation to the gullet.

Hygiene. Care of the teeth; bodily cleanliness and why; the sitting posture; lacing and tight shoes; fresh air; tobacco, alcohol, tea, coffee, bad food and bad cooking, and their effect; bad effects of many patent medicines.

SIXTH YEAR.

The skeleton. Review and teach names of principal bones. Structure of bones and repair of broken bones.

The muscles. Review. Structure; appearance; show composition by dissecting a piece of lean meat; identification and use of principal muscles; injuries,—sprains, bruises, etc.

Digestion. Review. The principal digestive organs and their secretions; the salivary glands; the stomach; the liver and pancreas; the intestines.

The blood. Review. The heart as a great pump; the connection of the veins and arteries with the heart (do not teach action of the heart).

Respiration. Review. The circulation of the blood in the lungs and between the lungs and heart; pure and impure blood and what makes the change from one to the other. The action of the kidneys and skin.

Hygiene. Review. Bodily conditions which invite disease; how diseases spread; the micro-organisms and how they increase and are disseminated; how killed; vaccination and antitoxins; colds and their prevention; pneumonia; tuberculosis; typhoid fever; scarlet fever. (See also Nature Study.)

Emergencies. What to do in cases of burns, blazing clothing, drowning accidents, etc.

SEVENTH YEAR.

The skeleton. Review of work of preceding grades. Connective tissue; cartilage and tendons; the lubrication of joints and connections; injuries to tendons, etc.

The muscles. Review of work of preceding grades. Identification and use of principal muscles—extend the list to perhaps a dozen or fifteen; cultivation of strength and methods of exercise.

Digestion. Review of work of preceding grades. The action of the several digestive organs upon the food.

The blood. Review of work of preceding grades. The circulation and action of the heart.

Respiration. Review of work of preceding grades. The waste given off by respiration; pure and impure air and effects of each. Let the class determine the cubical contents of the schoolroom and determine whether or not there is sufficient air for each pupil.

The nerves. Structure and uses.

Hygiene. Review. Sanitation: study of the local and state boards of health and their work. Have the class find out all they can about the organization of boards of health, public health laws, what local board is doing, and, if possible, get member of local board to talk to school;—public water systems and their management—let the class find out if the local system is likely to be contaminated and secure a talk from some representative of the local water system if possible—; private water supply and relation to health of household; milk supply and contaminated milk as a source of some diseases; sewerage systems, both public and private; safe disposal of sewage; impure foods and drugs as disease spreaders; pure food and drugs laws; mosquitoes and other insects and animals as conveyers of disease, and their control.

Emergencies. Review sixth year work, and so far as possible drill the class in imaginary cases.

EIGHTH YEAR.

General review of work of preceding years on skeleton, muscles, blood, digestion, and respiration.

The eye. Its coats and use of each; its nervous connections. Defects of eyesight,—their causes and manifestations. Proper care of the eyes.

The ear. Its structure and action. Care of the ear.

The nose, the tongue, and the skin as the seat of tactile sense.

The brain and spinal cord. Superficial appearance and larger details of structure. The uses of brain and cord as seats of thought, habit, instinct, etc. Very little which is known of the central nervous system is within the comprehension of common school pupils.

Emergencies. Review and drill as in seventh year.

Hygiene. Review of last three years. Cooking: food constituents and their values; proper methods of cooking and common improper methods; harmful foods and harmful cooking. Household sanitation: elimination of dust; proper ventilation; care of sleeping rooms; care of food closets, refrigerators, etc.; healthful and unhealthful location; care of cellar; disposal of waste.

CHAPTER XI.

HISTORY.

The plan of the history course may be summarized as a spiral of five parts, each adapted to the dominant interest of the child rather than to a logical method of sequence. The work of the first five years contemplates the laying of a broad basis, both psychologically and historically, for later historical study. It is not expected that the work of these years will be historically systematic, nor that at any moment the pupils will necessarily be able to account for dates or other facts. The emphasis is upon early life, and the work will be considered successful just in proportion as it arouses the interest of children. A sketch of the plan is here given:

1. Years I and II. Myth and hero tales of all lands.
2. Years III and IV. Readings in early colonial and pioneer history.
3. Year V. Readings in ancient history.
4. Year VI. More careful reading of (a) American history (b) English history.
5. Years VII and VIII. Intensive study of American history.

Importance of history.

History is one of the most important courses in the program of studies. Upon it are based all the later studies which have to do with the understanding of man in his social and political relations; and especially is it, more than any other formal study of the common school, the basis of an understanding of the duties of citizenship. School boards are advised that ample time and apparatus should be given to history, even if other subjects suffer.

Apparatus.

The apparatus of history should include: (1) sufficient historical supplementary reading and texts; (2) historical maps; (3) photographs and lantern slides, if possible, of historical pictures, persons, and places; (4) historical material, such as old deeds, letters, and other documents, and old implements and furniture. Much of it can be collected by the teacher.

Dramatization.

In years I to VI, especially, children are fond of acting. This characteristic is utilized by successful teachers in the dramatization of historical scenes, to the delight and profit of pupils. An historical event capable of such dramatization probably possesses a greatly deepened meaning for the children who take part in the acting.

Suitable events or episodes for dramatization are the following:

Columbus: his boyhood; the convent episode; his journey and visit at court; the voyages in discovery; his return.

Madam Yeardley and the visit of Indians.

Church-going on Christmas Day when Madam Yeardley took the Indian.

Puritan schools.

Puritan churches.

Priscilla and John Alden.

Miles Standish and the Indians.

Paul Revere.

Declaration of Independence.

A good variation of dramatization would be:

(1) Describing historical people and having children guess who they are.

(2) Drawing pictures of historical events or persons on the board for children to guess.

(3) Going to places—what historic interest to find.

FIRST AND SECOND YEARS.

Story telling.

See Impressional Language. The history of these years

will all be taken in correlation with language and on language time.

The stories should deal mainly with primitive people, or rather with people living under somewhat primitive conditions, as did the New England forefathers. Stories of Indians and the childhood of heroes are also excellent material.

The succession of holidays furnishes a good outline and basis of work in both these years, as follows:

September and October—Columbus and the Indians.

November—Thanksgiving and the Pilgrims.

January and February—Stories of Washington, Lincoln, and Franklin.

March to June—Memorial Day and Flag Day. Stories of Revolutionary heroes and Fourth of July.

In these years, the teacher should make large use of black-board sketches to illustrate stories.

The children will reproduce stories orally. They should also be allowed to illustrate stories by paper cutting, drawing, and pasting. Their work will of course be crude, but its educational value is none the less for that.

Select scenes from stories, occasionally, to be acted by children.

Material for stories will be found in the readers listed in the chapter on reading, but the teacher will find also a supply in the public library and especially in old traditions of the village or city in which she teaches. There is no objection, but rather an advantage, in selecting from second, third, and fourth readers, pieces for story telling, which the children will later on read.

THIRD AND FOURTH YEARS.

Story telling.

Continued as in preceding years. Use language time. Stories furnish material for oral and written reproduction, as does also the

Historical supplementary reading.

See also chapter on reading. The history here of course uses reading time.

The dominant interest still is in biography and tales of pioneer life.

Reading material.

History Readers for Elementary Schools....	MacM.
Great Americans for Little Americans....	A. B. C.
Colonial Children	Heath
Stories of the Red Children.....	Ed. Pub. Co.
Child Life Readers.....	MacM.
Children of the Wigwam...../....	Ed. Pub. Co.
American Pioneers	Ed. Pub. Co.
Boyhood of Famous Americans.....	Ed. Pub. Co.
America's Story, I and II.....	Heath
Stories of American Life and Adventure...	A. B. C.
Stories of Pioneer Life.....	Heath
Explorations and Discoveries.....	Heath
Stories of the Indians of New England.....	Silver
Four Great Americans.....	A. B. C.
Colonial Life in New Hampshire.....	Ginn

FIFTH YEAR.

The history of the fifth year will be carried on according to the same principles as in earlier years, through the use of supplementary readers and by way of feeding childish interest rather than requiring serious study. The field of interest, however, is the region of antiquity,—Hebrew, Greek, and Roman.

The reading period will be used for history.

History reading will furnish material for themes and for drawing.

Dramatization of historical scenes as in previous years.

Historical reading.

Old Greek Stories.....	A. B. C.
Hawthorne's Wonder Book.....	H. M. & Co.
Stories of the Bible, II and III.....	Ed. Pub. Co.
Ten Boys on the Road from Long Ago.....	Ginn
Story of the Greeks.....	A. B. C.

Story of the Romans.....	A. B. C.
Story of Cæsar.....	A. B. C.
Achilles and Hector.....	R. M. & Co.
Old Testament Stories.....	H. M. & Co.
Historical and Biographical Narratives....	A. B. C.

SIXTH YEAR.

The work of the sixth year will be a transition between the work of the preceding and that of the succeeding years. It will be mainly reading still and conducted on reading time, but as the books are read they should be discussed in class and the pupils should be expected to retain a knowledge of the main events,—their order, time, and relationship.

First half-year.

American history.

Reading and text-books.

Montgomery's Beginners' American History..	Ginn
Tappan's Our Country's Story.....	H. M. & Co.
McMaster's Primary History of the United States..	
.....	A. B. C.

Second half-year.

English history.

Reading and text-books.

Blaisdell's Stories from English History.....	Ginn
Guerber's Story of the English.....	A. B. C.
Warren's The Story of the English.....	Heath

SEVENTH AND EIGHTH YEARS.

The study of United States history throughout the two years.

Teachers and school boards are warned that history, like geography, must be taught as a collection of series of cause and effect to be *understood*, not as a collection of facts to be *memorized*. Children in these years who have had an adequate basis of extensive historical reading are now prepared

to understand history. The purpose of history teaching is now (a) the development of the power of studying history, (b) an intelligent appreciation of our country's institutions.

History in these years, as in all the preceding years, should be closely correlated with composition. (See chapter on Language.) The pupils should frequently be given historical topics to work up in the public, or school, library; to be brought to the teacher in outline and noted for criticism; and finally to be written up and read to the class. (See similar note on Geography.)

It will be necessary to select and follow some good text in history as the basis of the two years' work, but in order to state the minimum requirement, and to suggest the right proportioning of topics, the following outline is given:

Seventh year.

I. (4 weeks.) Period of discovery and exploration.

European conditions in the 15th century.

Columbus: life, purpose, results.

Other explorers: their motives and accomplishments.

II. (6 weeks.) Colonial period.

Study the following types of colonies:

1. Virginia type: settlements; representative government; royal governors; character of colonists.

2. New York type: settlements; Dutch rule; royal governors; relations with neighbors and Indians.

3. Pennsylvania type; settlements; proprietary government; relations with neighbors and Indians.

4. Massachusetts type: settlements; theocratic government; sub-colonies of Massachusetts; growth of representative government; relations with mother country; relations with Indians.

5. French-Canadian type: settlements; paternal government and schemes of the king; relations with Indians; contrasts with four preceding types.

III. (4 weeks.) Struggle between France and England for a continent.

The inevitableness of the conflict.

Relations of each to Indians.

Attitudes of the several colonies.

Reasons for English victory.

Effect of war upon the colonies.

IV. (12 weeks.) Revolutionary period.

Causes leading up to Revolution.

Attitude of America as expressed by Patrick Henry and Samuel Adams.

Attitude of sympathizers in England as expressed by Edmund Burke and the Earl of Chatham.

Attitude of George III.

First Continental Congress.

Washington: his record and character.

Independence: reasons and meaning.

Evacuation of Boston and New England.

British attempt to isolate New England—White Plains to Saratoga.

French alliance.

Valley Forge and its lesson of endurance.

The navy: Paul Jones.

Articles of confederation.

War in the South.

Yorktown.

Terms of peace treaty.

V. (10 weeks.) The Critical period.

Not one nation but thirteen.

Weakness of the confederation.

Commercial warfare; paper money.

Constitutional convention.

Compromises.

The men of the convention.

Eighth year.

VI. (2 weeks.) Rapid review of salient points of seventh year work.

VII. (12 weeks.) First period of expansion.

Industrial and commercial growth—early inventions.

Louisiana Purchase: significance and value.

Origin, principles, and growth of the political parties.

Causes and results of War of 1812.

Monroe Doctrine.

Growth of the great West.

Nullification. State rights.

The slavery question, beginning with the constitutional convention.

The beginning of the end of the Indian.

Causes and results of Mexican War.

Relation of results to the slavery question.

Discovery of gold in California and effect on transcontinental transportation and on emigration from Eastern States.

The slavery question in the fifties.

The crisis.

VIII. (10 weeks.) Period of disruption.

Effect of Lincoln's election on southern sentiment.

South's reason for secession.

North's reasons for resisting secession.

Union plan of war: (a) blockade of southern ports; (b) opening of Mississippi; (c) capture of Richmond.

Study the war as a series of campaigns, requiring the class to see the object of each campaign, and the significance of the principal battles.

Emancipation and thirteenth amendment.

Results of the war: settled: (a) state rights and secession; (b) slavery question.

Effects of the war (a) on North; (b) on South.

IX. (12 weeks.) Reconstruction and second period of expansion.

Plan of reconstruction.

Fourteenth and fifteenth amendments.

Effect of reconstruction period on the South.

Financial condition of United States.

The Monroe Doctrine and its application since the Civil War.

Territorial expansion since the Civil War.

Current events should be a part of the daily work of the

schoolroom. They are history in the process of making, are usually to be interpreted by historical reference, and often illustrate some phase of historical study.

Reading for teachers.

The teacher of history must read, read, read, a long way beyond and outside of the vision of her pupils. She should own a few substantial treatises, both histories and books on teaching history, and should read extensively the public library list, magazine articles, etc. A suggestive list is herewith given. The names of those books which every teacher ought to own are marked *.

*Special Method in History, McMurry.....MacM.

*Guide to the Study of American History, Channing
& HartGinn

The Teaching of History and Civics, Bourne.....

...../..... Longmans

How to Study and Teach History, Hinsdale.....

..... Appleton

Report of the Committee of Seven, N. E. A...MacM.

The Discovery of America.

*The Beginnings of New England.

Old Virginia and Her Neighbors.

The Dutch and Quaker Colonies.

New France and New England.

*The Critical Period of American History.

The American Revolution, John Fiske..H. M. & Co.

Pioneers of France in the New World.

La Salle and the Discovery of the Great West.

California and the Oregon Trail.

Montcalm and Wolfe, Parkman..Little, Brown & Co.

American History told by Contemporaries, Hart..

..... MacM.

*Students' History of the United States, Channing

..... MacM.

The Winning of the West, Roosevelt.....

.....G. Putnam's Sons

- *An Historical Geography of the United States,
 MacConnSilver
 Home Life in Colonial Days, Earle.....MacM.
 Customs and Fashions of Old New England, Earle
Scribners
 Costumes of Colonial Times, Earle.....Scribners
 Colonial Era, Fisher.....Scribners
 The Story of the Revolution, Lodge.....Scribners
 Nature and Man in America, Shaler.....Scribners
 American Statesmen Series.....H. M. & Co.

CHAPTER XII.

CIVIL GOVERNMENT.

The study of civil government is scheduled for the eighth year. Previously to that time, the pupil should have acquired a considerable knowledge of government from studies in geography and history, and from supplementary reading.

The study of the eighth year would best be based upon a suitable text, although this is not essential. The outline which follows is given for the guidance of teachers who have no text, and also for guidance in method of treatment in cases where a text is used. In either case, schoolroom work must be supplemented by visits to the seat of government wherever possible,—to the selectmen's office, to town and school district meetings, to the county court-house, the city hall, the capitol at Concord. Wherever feasible, the class should be taken to meetings of court, city government, and the general court. Whenever the teacher or any pupil has visited Washington, a full account should be given to the class. Civil government is closely connected with the history of the seventh and eighth years.

Apparatus.

The apparatus of civil government, beside texts, is public documents and reports of all kinds, and especially current events having to do with affairs of government,—local, state, and national.

Laboratory work in civil government is the reduction of functions of government to schoolroom illustration and experience. Wherever possible the class should be organized as (a) town meeting and town officers, (b) city government, (c) moot court and county officers, (d) state government. The capable teacher can accomplish great good by correlating her civil government and school management. She may organize

the school on the basis of self-government, allowing pupils to make laws, elect officers, and enforce their laws—subject to veto power.

It is recommended that the study of civil government be based largely on New Hampshire conditions, with but slight reference to historical development,—except in the case of the national government,—or to variations in other states. Such references will be more likely to confuse than to help the pupil's understanding at this stage.

I. (12 weeks.) Local government.

1. The town: what the town government does for the people; appropriation of money; assessment and collection of taxes; election and duties of town officers; preservation of order and administration of justice in the town.

2. The city: what the city government does for the people; representative government; election of councils,—caucuses, etc.; appropriation of money; assessment and collection of taxes; election or appointment of city officers; duties of several departments; preservation of order and administration of justice in the city.

3. The school district in New Hampshire: how it differs from town and city; its revenues, how derived and how expended; its officers.

II. (2 weeks.) County government.

What the county does for the people and why we need counties in addition to local government.

The county revenues—how derived and how expended.

The county officers, their election and duties.

III. (10 weeks.) The state government.

Study of the constitution of New Hampshire.

(a) The sources of authority of all government within the state; (b) what the state can do better than towns, cities, or counties.

Sources of revenues and appropriation of the same.

The state government—how chosen and duties and powers: (a) general court; (b) governor and council; (c) departments of state government; (d) state courts and their jurisdiction.

IV. (12 weeks.) The national government.

Study of the United States constitution.

Relation of national to state governments.

What the United States can do better than towns or cities, counties or states.

The national revenues—whence derived and how appropriated.

The national government,—how chosen, duties and powers: (a) congress; (b) president and cabinet; (c) departments of national government; (d) the United States courts and their jurisdiction.

CHAPTER XIII.

MUSIC.

It is not the mission of the music of the public schools to make musicians any more than it is the mission of reading poetry to make poets. Music is taught precisely as any other subject is taught, primarily for its value in rounding out the development of the educated man or woman.

A competent special teacher and supervisor of music is desirable but not essential. Nearly every teacher can sing some, and, since technical excellence is not a matter of primary importance, every teacher should do what she can. Excellent results have sometimes been obtained by teachers who have had an understanding of the elements of music, but who could not sing at all.

FIRST GRADE.

Songs by rote, without any sort of representation, develop the sense of tonality and rhythm through the use of melodic phrases sung with sol fa syllables and with words. Later in the year, if it seems advisable, add to this, for eye-training, the use of the staff, with notes to represent melodies, with the keynote in different positions on the staff. Rote singing and ear training should be the most important feature of the year's work.

SECOND GRADE.

Rote song work should be prominent throughout the year. Review work of the first year. Individual and class drill in singing melodic phrases by syllables and words from dictation work. Staff work in different key positions for eye training. Reading simple melodies from the chart or blackboard or from the book if thought desirable.

THIRD GRADE.

Rote singing. Review all previous work in staff drill and dictation. Promote eye training by a study of the staff by lines and spaces in all keys. Individual proficiency in perception of the function of the staff degrees, as representing the tones of the scale, should be secured. Review the note reading work of second year briefly. Begin the use of two tones to one beat and practice until class can sing two tones to one beat from the notes during the latter part of the year. Sight singing and rhythm practice. Special attention should be given to the development of the sense of rhythm these first three years.

FOURTH GRADE.

The end of the fourth year should find the children able to read simple music at sight in any major key. They should be able to sing sharp four, sharp five, sharp two, and flat seven. They should be able to sing exercises in 2-4, 3-4, and 4-4 measure and to sing readily groups of tones represented by the dotted quarter and eighth notes. They should know the names of the notes and the pitch names. The ability to read music should be utilized by the singing of a large number of songs wholly or partly at sight, and they should be able to sing suitable two-part melodies.

FIFTH GRADE.

At the end of the fifth year the class should be able to sing all the sharps and flats from the tone above and some of the flats from the tone below. In rhythm they should be able to sing at sight exercises containing the dotted eighth and sixteenth and the simple forms of 6-8 measure, two beats to a measure. They should be able to sing two-part melodies at sight.

SIXTH GRADE.

The class should become familiar with all chromatic tones, both sharps and flats, and be able to apply syllables to any

melody they have in mind from memory. They should use melodies and exercises in the minor mode and should practice the different forms of the minor scale. They should begin three-part singing. Should begin writing the signatures of the major keys from memory. In rhythm they should study all the forms found in 6-8 measure, two beats to a measure. Simple songs should be sung at sight without the use of syllables.

SEVENTH GRADE.

The class should use chromatic tones with facility. They should sing readily in three parts. They should become familiar with the different forms of the minor scale, their relation to the major scales, and write them with their proper signatures. In rhythm they should be able to read readily all the forms found in 6-8 measure, two beats to a measure, to sing four tones to a beat and should study syncopation.

EIGHTH GRADE.

The singing of standard songs, the study of composers' lives and introductory history and musical literature should be the leading work. The technical work previously studied should be reviewed and be enlarged upon if it seems desirable.

NOTE.—Special attention is called to the value of written work in all grades above the first. Small beginnings in original melody may be made in the primary grades, later scale progressions, intervals, phrases of songs learned and melodies from dictation. In upper grades original melodies set to simple couplets and stanzas. In all grades the voices of the children should be light in quality, smooth and free from harshness. All the singing should be intelligent, with good phrasing and proper attention to the sentiment of the words.

STANDARD FAMILIAR SONGS.

The teaching of the standard familiar hymns, national, patriotic, and folk songs may be begun in the third year (or ear-

lier) and carried forward through succeeding years until all the best of such songs are known by each child, and he is able to sing them from memory.

Following is a list of standard familiar songs which each child should know by the end of the fifth or sixth year.

Hymns general in character.

"Heavenly Father, Sovereign Lord."

"Come, thou Almighty King."

"O, Paradise."

"Jerusalem the Golden."

"Portuguese Hymn."

"God Ever Glorious."

"Abide With Me."

"Onward, Christian Soldiers."

"Praise the Lord."

Christmas hymns.

"It Came Upon the Midnight Clear."

"Hark, the Herald Angels Sing."

"Holy Night, Silent Night."

National and patriotic.

"America."

"Battle Hymn of the Republic."

"Star Spangled Banner."

"Red, White, and Blue."

"Rally Round the Flag."

"Tenting Tonight."

"Marching Through Georgia."

American Folk Songs.

"Old Folks at Home."

"Old Kentucky Home."

"Massa's in the Cold, Cold Ground."

"Home, Sweet Home."

"The Dearest Spot."

Folk Songs.

"Blue Bells of Scotland."

"Annie Laurie."

“Loch Lomond.”

“Auld Lang Syne.”

“The Harp That Once Through Tara’s Halls.”

“Oft in the Stilly Night.”

“Last Rose of Summer.”

“Watch on the Rhine.”

“March of the Men of Harlech.”

“All Through the Night.”

CHAPTER XIV.

DRAWING.

Often the school board may find it advantageous to use a text, or series of texts, for drawing. In that case the outline thus provided may be followed. The outline here given is, however, detailed to such an extent the texts will usually be found unnecessary.

The object of the teaching of drawing in the public schools is not to make artists, but rather to train the minds of all pupils to an appreciation and enjoyment of that which is beautiful in form and color. Its practical effect should appear in a heightened good taste in the choice of wearing apparel, furniture, etc., and in the erection and adornment of homes.

This subject is peculiarly susceptible of correlation with others, especially with nature, history, literature and composition, geography and manual training. In its relation to other subjects it is recreationary and, when properly taught, it should enhance the value of results in rather than detract from other subjects.

A competent special teacher should, if possible, be employed; but failing that, the capable regular teacher can accomplish important results.

The outline is planned under the following heads:

NATURE DRAWING.

The representation of plants, animals, and the human figure.

Appropriate rendering with pencil and brush, in neutrals and color.

Decorative composition.

COLOR.

Elements, schemes, harmony.

Mixing of pigments.

Study of examples of harmonious coloring.

Application in representation and decorative design.

PICTORIAL DRAWING.

The representation of the appearance of objects.

Perspective principles.

Rendering with pencil and brush, in neutrals and color.

Study of pictures by masters.

Composition.

STRUCTURAL DRAWING.

Structural elements: geometric figures, solids, abstract curves.

Elements of beauty: harmonious relation, refinement.

Accurate drawing with compasses and ruler.

Study of examples of good applied design in common objects, as to fitness to purpose and refinement of form.

Designing of common objects.

DECORATIVE DRAWING.

Geometric, floral, and symbolic elements.

Arrangement to secure balance, rhythm, and harmony.

Study of examples of good design.

Designing of borders, surfaces, and panels, in harmonious coloring.

FIRST YEAR.

SEPTEMBER.

Draw sedges, grasses, and fall flowers, as aster and dandelion, with colored pencil, to show growth and movement.

Practice drawing circles and straight lines on the black-board.

OCTOBER.

Draw sedges, grasses, and flowers, in circles or oblongs, prepared by the teacher, and add initial to make a well-balanced arrangement.

Study the spectrum and six standard colors, R, O, Y, G, B, V, and collect illustrations.

Make the six-toned spectrum from colored paper.

NOVEMBER.

Practice with brush, and fill circles with washes of primary colors, R, Y, B.

Draw fruits: orange, lemon, banana; and vegetables: potato, beet, carrot, with colored crayons.

Make drawings suggestive of Thanksgiving.

DECEMBER.

Practice printing capital letters.

Make gift cards or blotters appropriate to the season, using drawings or mounted pictures.

Select and study Christmas pictures.

JANUARY.

Study pictures for the story.

Examples for study:

A Piper and Pair of Nut Crackers.....Landseer

The Pet Bird.....Meyer Von Bremen

The Holy Night.....Correggio

Practice drawing circles and squares on the blackboard.

Draw objects of simple proportions, as a circular fan, a square holder, a watch, in silhouette.

FEBRUARY.

Draw common animals, as rooster, cat, or rabbit.

Make freehand drawings of circle, square, and oblong.

Practice in the use of the ruler, and measurement of inches.

MARCH.

Make drawings of square and oblong, using the ruler.

Make a Japanese flag or a cold wave signal from colored paper, and mount on a background.

Make a badge from colored paper, and mount on a background.

APRIL.

Study stripe patterns in contrasted coloring, from collected illustrations.

Practice with the brush, and make simple stripe patterns, using a standard color.

Begin the study of simple spring flowers with colored pencil.

MAY.

Draw simple spring flowers, as dandelion, buttercup, bluet.

Study borders from collected illustrations having simple evident units.

Practice arrangement and spacing, and copy simple frets; first laying sticks, afterward drawing.

JUNE.

Make borders of lines or simple figures.

Make borders suitable for handkerchiefs, using plant details or other simple forms as units.

SECOND YEAR.

SEPTEMBER.

Draw sedges, grasses, and fall flowers, as aster and dandelion, or seed vessels, as rose hip or poppy head, with colored pencil or brush, to show growth and movement.

Practice drawing circles and straight lines on the blackboard.

OCTOBER.

Draw sedges, grasses, flowers or seed vessels, in circles or oblongs, and add initials to make a well-balanced arrangement.

Review the spectrum standards.

Study gradation of color, light and dark—key tone, tints and shades, and arrange collected illustrations.

Make scales of standards from colored paper.

NOVEMBER.

Practice with the brush, and fill circles with flat washes of color, mixing primaries to make secondaries—R plus Y equals O; Y plus B equals G; B plus R equals V.

Draw fruits: orange, lemon, banana, apple, pear, plum; and vegetables: potato, beet, turnip, carrot, squash, onion, with colored crayons, studying characteristic markings and suggesting light and dark.

Make a drawing suggestive of Thanksgiving.

DECEMBER.

Practice printing alphabet of capitals.

Make gift cards or blotters, using drawings or mounted pictures, and add appropriate greetings.

Select and study Christmas pictures.

JANUARY.

Study pictures for the story.

Examples for study:

A Fascinating Tale.....Mme. Ronner

A Helping Hand.....Renouf

The Children of the Shell.....Murillo

Practice drawing circles, squares, triangles, and oblongs, on the blackboard.

Draw common objects, as a hand bag, an open fan, a whisk broom, or a simple plant in pot, in silhouette.

FEBRUARY.

Draw common animals, as rooster, bird, dog, cat, rabbit, to show some characteristic action: eating, running, etc.

Make freehand drawings of circle, square, triangle, and oblong. Practice in the use of the ruler, and measurement of inches and half inches.

MARCH.

Make drawings of the triangle and oblong, using the ruler.

Make a Greek cross from colored paper and mount on a background.

Make a shield from colored paper and mount on a background.

Apply the Greek cross to the decoration of covers for number, language, or other school work.

APRIL.

Study stripe patterns having wide and narrow stripes of one color, from collected illustrations.

Practice with the brush, and make arrangements of broad and narrow stripes in two tones of one standard.

Begin the study of buds and spring flowers, with colored pencil and brush.

MAY.

Draw simple spring flowers, as daisy, dandelion, buttercup, in different positions: top view, side view.

Study arrangement and spacing in surface designs, from collected illustrations of polka dot and other simple patterns.

Practice arrangement and spacing, and copy a simple surface design.

JUNE.

Make surface designs, using lines or simple figures as units.

Make surface designs, using plant details as units.

THIRD YEAR.

SEPTEMBER.

Draw sedges, grasses, fall flowers, as aster and dandelion, fall berries, woodbine, or simple brilliantly colored leaves, with colored pencil or brush to show growth and movement.

Practice drawing on the blackboard, circles and straight lines, and abstract curves: the curve of force, the reversed curve, and the spiral.

OCTOBER.

Draw sedges, grasses, leaves, flowers or seed vessels in circles or oblongs, and add initials to obtain good space division and balance.

Review standard colors, tints and shades, and compare black, white, and gray.

Study gradation of color by hues, and arrange collected illustrations.

Make color groups, each containing a standard and two related hues, from colored paper.

NOVEMBER.

Review the mixing of primary colors to make secondaries: R plus Y equals O; Y plus B equals G; B plus R equals V.

Fill circles with flat washes of color, modifying standards to make hues: R to VR or OR, O to RO or YO, Y to OY or GY, etc.

Draw fruits or vegetables singly, and in groups of two or three, with colored crayons or with brush and color, studying characteristic marking, and suggesting variations in hue.

Make a drawing suggestive of Thanksgiving.

DECEMBER.

Practice printing alphabet of capitals.

Make gift cards, blotters, or calendars, using drawings or mounted pictures, and add appropriate greetings.

Select and study Christmas pictures.

JANUARY.

Study pictures for the story.

Examples for study:

"Can't You Talk?".....	Holmes
Feeding Her Birds.....	Millet
The Sistine Madonna.....	Raphael

Practice drawing ellipses, triangles, and oblongs of different proportions on the blackboard.

Draw common objects, as a jar or jug, chatelaine bag, bowl containing spoon, a simple plant in pot or a toy or doll in silhouette.

FEBRUARY.

Draw common animals, as rooster, bird, dog, cat, mouse, fish, and add some simple object as accessory, as dog and house, mouse and trap, fish in globe.

Practice in the use of the ruler, and measurement of inches, half and quarter inches.

MARCH.

Draw oblongs of different proportions with diameters and diagonals, using the ruler.

Make a Maltese cross from colored paper and mount on a background.

Make a paper cutter from stiff card and mount on a background.

Apply the Maltese cross to the decoration of a cover for number or language papers, or other school work.

APRIL.

Study simple plaid patterns from collected illustrations.

Practice with the brush, and make plaids with broad and narrow stripes, using a standard color and one or two hues.

Begin the study of buds and spring flowers with colored pencil and brush.

MAY.

Draw simple spring flowers, as daisy, cowslip, dandelion, buttercup, in different positions: top view, side view.

Study arrangement and spacing, in surface designs having simple evident units, from collected illustrations.

Practice grouping lines, spots, or simplest geometric figures to make units.

JUNE.

Make surface designs, using these units.

Make surface designs, using plant details as units.

FOURTH YEAR.

SEPTEMBER.

Draw simple sprays of leaves, flowers, as aster or marigold, seed pods, as bean or pea, with pencil or brush, giving special attention to lines of growth and character of mass.

Practice drawing on the blackboard, circles and straight lines, and abstract curves: the curve of force, the reversed curve, and spiral.

OCTOBER.

Draw with the brush simple sprays, flowers or seed pods in oblong enclosing forms, arranged to secure good space division and balance.

Study scales of color for values: central tone, tints, and shades.

Analyze for their color schemes, natural specimens containing two or three tones of one color, using colored paper.

NOVEMBER.

Make with water color a scale of five tones, having three intermediate tones of gray between black and white.

Make a similar scale having the three intermediate tones of one color.

Study apparent changes in the size and level of objects, as affected by distance, from collected pictures.

Draw fruit or vegetables singly and in simple groups, giving special attention to character, and indicating the separation between background and foreground.

DECEMBER.

Continue the drawing of simple groups.

Make a drawing of some object from memory.

Practice printing alphabets of capitals and small letters.

Make Christmas cards, using drawings or small pictures and printing appropriate text to make a well-balanced whole.

JANUARY.

Study pictures for artistic treatment and composition: unity through emphasis of principal object and subordination of details.

Examples for study:

Kabyl	Schreyer
Penelope Boothby	Reynolds
Madonna and Child.....	Dagnan-Bouveret

Write a description of one of the pictures studied, with something of the artist and his other works. The work of the class should include all three.

Draw in outline single objects or groups of two objects, arranged decoratively within given spaces, and fill with washes of black and gray, or with two tones of one color.

FEBRUARY.

Draw common animals, as dog, cat, bird, squirrel, or rabbit, and add some simple accessory to make a picture: as cat eating from saucer, squirrel cracking a nut, rabbit in grass.

Practice in the use of the ruler, and measurement including quarter and eighth inches.

Draw accurately the circle, square, and equilateral triangle, using compasses and ruler.

MARCH.

Review the cross forms, and study the trefoil and quatrefoil, drawing on the blackboard.

Design a penwiper or push-button, giving special attention to fitness to purpose and refinement of form.

Make a cover for written work, using the trefoil and quatrefoil for decoration.

APRIL.

Compare the relative quantities of intense and subdued tones, in collected illustrations of good color schemes in one scale.

Study plaid patterns and make plaids with the brush, using tones of gray and black.

Make plaids using three tones of one color.

Begin the study of spring flowers in color.

MAY.

Draw spring flowers, as violet, cowslip, bluet, tulip, in color.

Review ornamental cross forms and study rosettes.

Design cross forms or rosettes suggesting flower forms, suitable for use as florets in printing.

JUNE.

Study consistency in the measures of a design, and make surface designs with elements made by grouping straight lines of equal length, or squares and oblongs of equal area, using tracing paper ruled into one fourth inch squares.

Make surface designs in two or three tones of one color, using simple rosettes as units, and giving special attention to relative proportions of spaces and units.

FIFTH YEAR.

SEPTEMBER.

Study foreshortened leaves in different positions, and draw simple sprays of leaves; flowers with leaves, as clover, salvia; seed pods, as milkweed; or a whole plantain; noting carefully the lines of growth.

Practice drawing on the blackboard, ellipses, ovals, and abstract curves: the curve of force, the reversed curve, and spiral.

OCTOBER.

Draw with brush and ink, decorative arrangements of sprays, flowers, seed vessels, or simple plants in rectangles, to secure good space division and balance.

Study analogous relations of color.

Analyze for their color schemes, natural specimens containing two or three analogous tones, using colored paper.

NOVEMBER.

Review scales of gray and color in five tones.

Make chords of three analogous tones in water color.

Study foreshortening of the circle in different positions, from collected pictures.

Draw simple objects involving foreshortened circles: hemispherical bowl, mug, dish, basin.

DECEMBER.

Draw groups of two or three objects, as dish with fruit, kettle with vegetables, tumbler, spoon and lemon, noting comparative size and form.

Make a drawing of some object from memory.

Practice printing alphabets, studying proportions of letters.

Design Christmas cards or tokens, using drawings or pictures, and printing appropriate text to make a well-balanced whole.

JANUARY.

Study pictures for artistic treatment and composition: unity through emphasis of principal object and subordination of details.

Examples for study:

The Shepherdess	Lerolle
Diogenes in Search of an Honest Man.....	Salvator Rosa
The Holy Family.....	Murillo

Write a description of one of the pictures studied, with something of the artist and his other works. The work of the class should include all three.

Draw in outline, single objects or groups of two objects, arranged decoratively within given spaces, and fill with washes of black and gray, or with two analogous tones with gray, white, or black.

FEBRUARY.

Draw common animals, as cat, bird, squirrel, rabbit, fish.

Make a simple decorative arrangement within a given enclosing form, as fishes swimming, birds flying.

Draw accurately an oblong and a rhombus of good proportions, using the ruler.

MARCH.

Study shapes and proportions of panels, tablets, and escutcheons, from objects and collected illustrations, giving special attention to fitness to purpose and refinement of form.

Design escutcheons, tablets, or door plates with appropriate lettering.

Make covers for written work, using panels of good proportions to contain printed titles.

APRIL.

Study collected illustrations of good analogous coloring, and compare the relative proportions of intense and subdued color.

Apply schemes of three analogous tones to the coloring of tiles.

Begin the study of spring flowers in color.

MAY.

Draw spring flowers, as violet, cowslip, anemone, jonquil, tulip, in color.

Study the fleur de lis and similar forms.

Design simple bilateral ornaments suggestive of flower forms, suitable for use as florets in printing.

JUNE.

Study consistency in the measures of a design, and make surface designs from ornamental repeats made by grouping straight and curved lines, using tracing paper over paper ruled into one-fourth inch squares.

Make surface designs in two or three analogous tones of color, using bilateral units, and giving special attention to relative proportions of spaces and units.

SIXTH YEAR.

SEPTEMBER.

Study and draw sprays of leaves, as birch, oak, maple; flowers, as goldenrod or butter-and-eggs; or fruit on branch, as apple, pear, or plum; noting characteristic details.

Practice on the blackboard, drawing ellipses, ovals, and abstract curves: the curve of force, the reversed curve, and spiral.

OCTOBER.

Make decorative arrangements of sprays of leaves, flowers, or fruit, in rectangles, to secure rhythm and balance, using black and grays or color.

Make drawings in pencil, ink, or color, from cross sections of fruit or vegetables, as lemon, cucumber, tomato, or squash.

Review analogous relations of color.

Analyze for their color schemes, natural specimens containing analogous relations of color, using water colors.

NOVEMBER.

Review chords of three analogous tones.

Make chords of five analogous tones, using water color.

Review foreshortening of the circle, and study convergence from collected pictures.

Draw simple rectangular objects involving foreshortening and convergence, as boxes, books, etc.

DECEMBER.

Draw groups of objects involving foreshortening and convergence, as a box with bon-bons, writing materials, etc.

Make a sketch of a door partly open.

Make a drawing of some object from memory.

Practice printing alphabets, studying proportions of letters.

Print tablets or simple placards.

JANUARY.

Study pictures for composition: unity through concentration of interest by means of action and leading lines.

Examples for study:

The Horse Fair.....Rosa Bonheur

Reading HomerAlma Tadema

Christ and the Doctors.....Hofmann

Write a description of one of the pictures studied, with something of the artist and his other works. The work of the class should include all three.

Draw in outline, single objects or groups of two objects, arranged decoratively within given spaces, and fill with washes of black and grays or with analogous tones with gray, white, or black.

FEBRUARY.

Study and draw a simple pose in silhouette, as a boy or girl standing with umbrella, book, or bag, having the face turned from the class.

Look first for the long lines in the figure, giving attention to action and proportion, not to details.

Draw accurately an ellipse and oval, using the trammel in the construction of the ellipse, and compasses and trammel in the construction of the oval.

Study views and their relations and draw front and top view of square prism and cylinder.

MARCH.

Study fitness to purpose, and beauty in objects, through variety and proportion, using collected illustrations.

Design picture mounts or paper knives of good proportion.

Design bowls of good proportion and curvature, and decorate with bands of color.

APRIL.

Study collected illustrations of good analogous coloring; and compare the relative proportions of intense and subdued color.

Apply schemes of analogous tones to the coloring of tiles.

Begin the study of spring flowers in color.

MAY.

Draw spring flowers, as violet, cowslip, anemone, jonquil, tulip, in color.

Study the lotus and its use in ornament.

Practice grouping lines and spots to secure rhythm.

JUNE.

Design bi-symmetrical or radial ornaments suggesting flower forms.

Study Japanese method of arrangement in surface covering.

Make surface designs in color, arranging in a similar manner units derived from top and side views of flowers, or from cross sections of fruit and vegetables drawn in October.

SEVENTH YEAR.

SEPTEMBER.

Study and draw sprays of leaves, as sumach, oak, maple; flowers, as goldenrod, butter-and-eggs, salvia, or scarlet geranium; or fruit on branch with leaves, as apple, pear, or quince, noting characteristic details, as joints and thickness of stems.

Practice on the blackboard, drawing ellipses, ovals, and abstract curves; the curve of force, the reversed curve, and spiral.

OCTOBER.

Make decorative arrangements of sprays of leaves, flowers, or fruit on branch, in rectangles, to secure rhythm and balance, using black and grays or color.

Study and draw trees of characteristic shape, as apple, cedar, elm, or pine. Arrange in rectangles, and suggest a hillside, a path, or rock, to make a well-balanced composition.

Study hot colors: R, O, Y; and cold colors, G, B, V; and the relations of complementaries: R-G, O-B, Y-V.

Analyze for their color schemes, natural objects containing complementary colors in two or three tones, using water colors.

NOVEMBER.

Mix the three primaries R plus Y plus B to make neutral or subdued colors and gray.

Make chords of complementary colors in three tones.

Study foreshortening and convergence from collected pictures.

Make sketches of the square prism in different positions.

Draw rectangular objects, as a dress suit case, covered box, or a simple article of furniture.

DECEMBER.

Study grouping to secure unity.

Draw groups of objects, as a vase with books, materials for water color painting, a Japanese teapot with cup and saucer.

Make a drawing of some object from memory.

Study character and proportions of good letters, and design initials.

Avoid over-elaboration, and gain beauty through refined proportions.

JANUARY.

Study pictures for composition: unity through concentration of interest, by means of leading lines and action or movement.

Examples for study:

The Old TemeraireTurner
AuroraGuido Reni
Christ in the Peasant's Cottage.....L'hermitte

Write a description of one of the pictures studied, with something of the artist and his other works. The work of the class should include all three.

Draw in outline, single objects or simple groups, arranged decoratively within given spaces, and fill with washes of black and grays, or with complementary tones with gray, white, or black.

FEBRUARY.

Study and draw from a simple pose suggesting action, as a girl sweeping, a girl or boy marking on the blackboard, a boy with a tennis racket or baseball bat. Look first for the long lines expressing action in the figure, then observe the proportions as the number of heads in the figure, etc. Do not attempt details.

Draw accurately the hexagon, octagon, and pentagon, using compasses and ruler.

Study the relation of views and method of figuring in working drawing.

Make a working drawing, in two views, of a simple rectangular object, as a box, and mark important dimensions.

MARCH.

Study illustrations of good applied design in articles of common use, giving special attention to fitness to purpose and refinement of form.

Design folding picture mounts or triptychs.

Design mugs, cups, and jars, giving special attention to shape and proportion of handles.

APRIL.

Study collected illustration of good complementary coloring, and compare the relative quantities of intense and subdued color.

Apply balanced schemes of two or three complementary tones to the coloring of tiles or panels.

Begin the study of spring flowers in color.

MAY.

Draw spring flowers in color: violet, anemone, columbine, lady's slipper, jonquil, or fruit blossoms in clusters.

Study the anthemion and similar forms for rhythm and balance.

Practice grouping lines and spots to obtain balance and rhythm.

Repeat, using flower forms.

JUNE.

Design book covers, applying bi-symmetrical ornaments.

Make surface designs in color, arranging bi-symmetrical units to obtain balance and rhythm.

EIGHTH YEAR.

SEPTEMBER.

Study and draw sprays of vines as woodbine, wild cucumber, grape, nasturtium; or branches with fruit, as apple, quince, chestnut, hickory, horse-chestnut; or wild plants, as mullein or milkweed, noting characteristic details.

Practice on the blackboard, drawing abstract curves.

OCTOBER.

Make decorative arrangements of sprays of leaves, vines or branches with fruit, in rectangles or other enclosing forms, to secure balance and rhythm. Render in black and grays, or

color, experimenting with different schemes of tones, to decide the most agreeable.

Study and draw trees, as birch, oak, maple. Render these in color, arranging in rectangles and adding some simple accessory, as a rock, path, or hillside, to make well-balanced compositions.

Review analogous and complementary relations of color.

Analyze natural objects for their color schemes, and render important tones in water color.

NOVEMBER.

Review the making of neutral or subdued colors, and gray, by mixing the primaries R plus Y plus B.

Make chords of more than three tones from complementary color scales.

Review foreshortening and convergence, and study these phenomena from collected pictures.

Make sketches of the triangular prism and pyramid in different positions.

Study grouping to secure unity.

Draw groups suggestive of a theme, as vacation, lunch, needle work, an occupation or a game.

DECEMBER.

Draw a corner of the room, or other bit of interior.

Make a drawing of some object from memory.

Study character and proportions of good letters, and print titles for covers of books, sheet music, etc.

JANUARY.

Study pictures for composition and artistic treatment: harmony through relation of masses—opposition, gradation; relation of lines—contrast, flow; rendering of detail—literal and suggestive.

Examples for study:

June Clouds	Hunt
Spring	Corot
The Gleaners	Millet
The Delphic Sybil.....	Michael Angelo
The Madonna of the Chair.....	Raphael
The Golden Stairs.....	Burne-Jones

Write a description of one of the pictures studied, with something of the artist and his other works. The work of the class should include all four.

Use photographs and illustrations for suggestions in landscape.

Make decorative landscape compositions, arranging elements in rhythmic space relations, as tree and church, with hillside; house, tree, and road; sea, boat, and shore; meadow and winding stream. Render in black and grays or color.

FEBRUARY.

Study and draw from a pose. Have the model in costume to represent some character, as soldier, nurse, traveler; or posed to suggest some action, as reading, knitting, playing golf or tennis.

Observe the following order of steps in drawing: (1) Sketch the long lines expressing action. (2) Note carefully the proportions of the figure. (3) Draw important details.

Review the relation of views and methods of figuring in working drawing.

Make a working drawing of some common object, as a sled, table, pulley.

MARCH.

Study illustrations of good applied design in articles of common use, giving special attention to fitness to purpose and refinement of form.

Design tables, bookcase, chair backs, andirons.

Design jars, vases, or pitchers, and render in washes of color.

APRIL.

Study collected illustrations of good coloring, for balance of complementary tones, and relative proportions of intense and subdued color.

Apply a balanced scheme in tones from complementary scales to the coloring of a panel or rug.

Begin the study of spring flowers in color, rendering them decoratively in a few well-related tones.

MAY.

Draw spring flowers, as columbine, rhodora, lady's slipper, dogwood, iris, jonquil, or fruit blossoms, in color, decoratively.

Study the acanthus, and other adaptations of plant forms in ornament.

Practice grouping lines and spots to obtain balance and rhythm.

Make similar arrangements, using adapted plant forms.

JUNE.

Make surface designs in ink, from rhythmic arrangements of lines and spots.

Make surface designs in color, from similar arrangements of adapted plant forms.

CHAPTER XV.

NATURE STUDY AND ELEMENTARY AGRICULTURE

TO THE TEACHER.

Keep in mind that it is your problem not to teach this course as a technical or semi-technical subject like arithmetic or English grammar, but rather to present the topics outlined, as interest calls, to the end of *sharpening the senses, enlivening all school work, putting children in touch with the simpler facts of nature.*

PLAN YOUR WORK. Arrange it far ahead so as to make it articulate with your other subjects, the season, and the materials you can get. Study the outline and decide when you will teach each part of it, and then be ready. Always attend to things the pupils bring in and are interested in. If such things are beyond your knowledge, study them with the pupils.

You may not be able to teach all the work outlined in the course. Then teach a part of it and teach that part so well that both you and the pupils will want more. Study the work as you teach it so that you may grow stronger each time you teach the work.

Make and keep collections of useful materials. Pupils and patrons will help if you will only ask them.

It has been attempted to arrange the outline so that grades one and two, three and four, five and six, and seven and eight can be combined and the work shortened in crowded schools. There is a sequence in the plant work from year to year, and in the same way in the other work. So, endeavor to connect last year's work and prepare for next year's.

It is assumed that every teacher will have in the room, flowers, potted plants, etc., and the children will be asked in

turn or together to assist in caring for them. Also that the children will be enlisted in the work of cleaning, caring for, and improving the school grounds; and a pride in the appearance of the grounds developed in each pupil.

For the first four years, nature study includes home geography.

Systematic work in geography proper begins in fifth year.

Get your name on the mailing list to receive Bulletins from the Agricultural College at Durham. Read them carefully. Allow your pupils to read them. Send for United States Bulletins. A letter addressed to the Department of Agriculture, Washington, D. C., asking for a list of available bulletins, will bring a list from which you may make selections. If you request the Commissioner of Documents, Washington, D. C., to send you the monthly list of publications, you will know of new bulletins within one month of the time they are issued. Ask the department for the list of bulletins available now and make selections from this list.

APPARATUS AND MATERIAL.

The successful teacher by the exercise of ingenuity can carry on a great deal of work with very little apparatus. Tin cans, plates, saucers, glass tumblers, enameled basins, pasteboard and small wooden boxes, pieces of glass, blotting paper, etc., should be carefully preserved from term to term.

Fruit jars, mustard bottles, or battery jars make good aquaria. Fruit jars, tumblers, or wide-mouthed bottles with muslin or cheese cloth tied over the tops make good insect cages. A lantern chimney on a pot of earth and the top of cloth makes a better cage. A box eight or ten inches deep with three inches of earth in the bottom and a screen top makes a good vivarium. Two plates turned face together, so that one becomes a cover, with several thicknesses of cloth in the bottom plate, moistened and kept moist, make a good seed tester. Put a thin block under the cloth, allowing the edges of the cloth to touch the bottom of the plate. Plant seeds on the cloth above the block, cover them with a double layer

of cloth, pour water around the block, and you have a good seed tester. It keeps the seeds wet, out of the water, and enables you to examine and count easily.

Flower pots and tin cans, with the bottles, glasses, and fruit jars, furnish good seed and earth experiment materials. Shallow boxes, narrow enough to stand in the window, make good window gardens. Blocks may be used to divide them into parts for different soils. Care must be taken in watering.

A schoolroom model of a hot-bed could be made of a box fourteen inches deep on one side and twenty inches on the other, preferably eighteen inches or two feet wide and of length to suit. Cover with glass in frames, and arrange on another box, bench, or chairs of convenient height with the slanting glass top facing the sun. Put manure and earth in the bottom and the class may get all the principles of hot-bed work. An outside bed is to be preferred, of course. Many valuable lessons may be given the boys, even by a teacher who has not had manual training, if they are detailed to make apparatus according to written plans and held to careful workmanship.

A school garden is of the greatest importance and can be started on the school grounds, or near by, on all but a few of our schoolhouse lots—and these few chiefly in the cities. Do not give up the idea of a garden because you cannot have exactly what you would like. Almost anything is better than nothing.

Window boxes eight inches wide, seven inches deep, and as long as the window is wide, make good gardens for the window sill. If these are made of zinc they do not leak, last a long time, and may be painted to look very neat. Zinc boxes must not be kept too wet. Shallow wood boxes may be lined with zinc and used as trays for flower pots, etc. Both of these may do service as aquaria. See sketches for other suggestions.

Most nature study texts give helpful suggestions for making apparatus, as do the United States Bulletins. Hodge's Nature Study and Life, Holtz's Nature Study, and other books

mentioned below make helpful suggestions concerning apparatus.

FOR KEEPING LIVE ANIMALS AND INSECTS.

I. An insect cage made from a lantern or lamp chimney set in earth in a flower pot or tin can and a piece of cloth tied over the top.

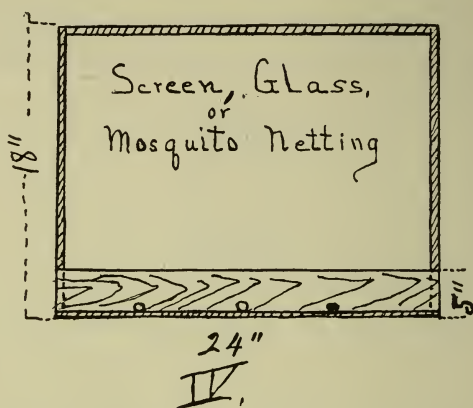


II, A battery jar, and III, a fruit jar aquarium. There should be a few snails to keep it free from shine and some hornwort, elodia, and perhaps duckweed in the water to furnish oxygen. Polliwogs, aquatic larvæ, and other water animals may be kept in these. Polliwogs get along better if a piece of slate is fastened half into water so as to furnish a shallow shore line on which they may rest. The slate may be hung on wires from the top of the jar. Larger square aquaria may be purchased from dealers if funds are available.

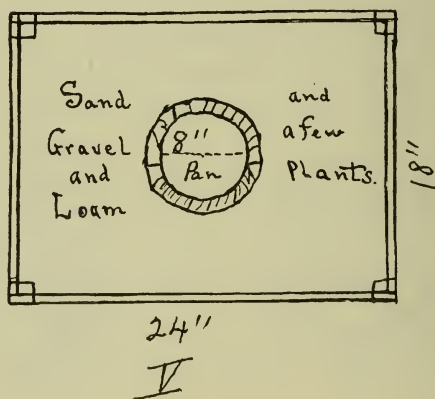


IV, Side view, and V, floor plan of a vivarium or terrarium. A box five inches deep and two by one and one-half feet (or of a size to suit), has posts eighteen inches long fastened in

each corner and connected at the top by wooden bars. Cover the top with a door made of netting. The sides may be glass, screen, or cloth netting, or one or two sides may be of wood.



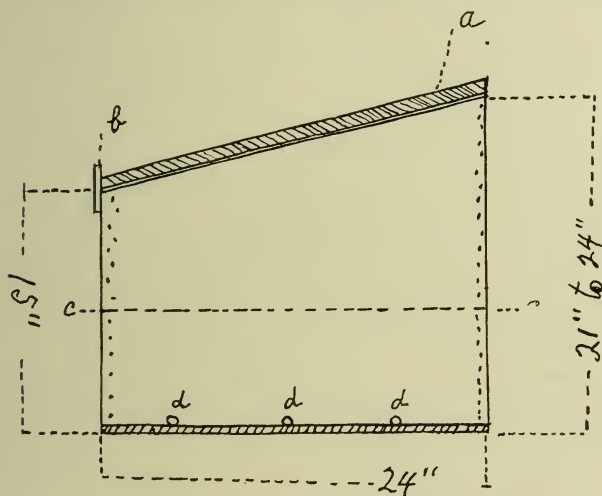
Fill the box with a mixture of sand, gravel, and loam and in the center bury to the top a dish or granite pan for water. Put in a few plants and this will furnish a home for insects, toads, salamanders, etc. It may be used for seed germination



at other seasons. It will probably be more successful if two or three holes are bored in each side near the bottom for drainage.

AN INSIDE HOT-BED.

A very serviceable and at the same time a typical hot-bed for inside or even outside use may be made in the school. A convenient size is two by three, although the length and width may be varied but should be such that a window sash can be purchased to fit the top. The sketch shows the end view of such a bed two feet wide, fifteen inches deep on the south and twenty-one to twenty-four inches deep on the north side. If the bottom be a box two by three feet and eight inches deep and the top be removable, the box may be used for other seed



and soil work. In the diagram (Fig. 6) *a* represents the sash cover; *b*, a strip to hold the sash in place; *c*, line of division between bottom and removable top; *d, d, d*, drainage holes. Such a box should contain six inches of fermenting manure and five inches of earth above that. It may have legs nailed to it or be supported by a box or table. The south side of the top should be level with a south window if possible. If buried for use outside it needs no bottom but should be well banked to the top with earth.

Directions for making larger outside hot-beds may be obtained from bulletins and agricultural papers and textbooks.

FIRST YEAR.

Common Trees and Plants. Teach the children to identify common trees, as the maple, oak, birch, giving special attention to the leaves.

Teach the children to recognize the common flowers and vegetables of the street, orchard, garden, and home; colors and home of fall and spring flowers, use as decorations and for drawing lessons.

Study effects of frost on plants. Leaf fall and preparation for winter. Gather seeds of a few trees, especially nut tree; use to trees and as animal food. Food plants of locality. Gathering and storing for winter of nuts, berries, fruits, grains, and vegetables. Where kept and why?

Observe evergreen trees throughout winter.

Opening of buds in the spring, flowers, and leaves of trees. What have they been doing through the winter?

Seeds and Germination. Plant seeds of bean, corn, and pea on blotting paper under drinking glass. Watch them swell and grow; notice growth of roots, stem, and leaves. Find baby plant in soaked seeds and its food. Toward spring start the seeds in soil. Use of soil to the plant.

Garden. The aim of this year's garden work should be to familiarize the children with plants as raised. The keynote of this and the next year's work should be recognition of and some acquaintance with a considerable number of forms,—plant, animal, and inanimate.

Birds and Insects. Simple lessons on food, nesting, care of young, and migration of better known or commoner birds of each season. Very simple lessons on insect life, food, homes, hiding, etc.

Common Animals. Study pets as to simple form, covering, movements, food habits, hunting, sleeping, etc. Note seasonal changes.

The Home. Building materials, heating, lighting, getting fuel,—all in the simplest way.

Geography. Direction,—use well-known roads, streets,

buildings, or homes to aid in developing idea. Teach pupils to tell time. Teach names of days in the week, months, and days in the month by keeping and constantly using a calendar for weather records. Include in calendar, weather observations: winds named from points of compass, dew, frost, rain, snow, ice, cloudy and fair weather.

SECOND YEAR.

Common Trees and Plants. Review trees and plants learned last year, and teach pupils to know such new ones as the elm, ash, butternut, etc. Teach pupils to distinguish trees by twigs, leaves, and general shape. Note length of trunk and branching habit. Include apple or other fruit trees and evergreens as well. Use leaves for games, exercises, sense-training, drawing, and paper-cutting as in the first year's work. Review leaf fall; notice scar and bud ready formed for next year. Winter protection of buds, uses of buds. Teach how fruits and seeds come from flowers by watching the development closely. Uses of trees as producers of food, and as lumber for houses, furniture, etc.

Seeds and Germination. Review seed work of last year, using new seeds; include some nuts or tree seeds planted in the fall. Use the lima bean and make a careful study of the bean,—dry, soaked, separated, and growing in boxes or cans. Watch carefully the growth of the roots.

Garden. Set out some of the plants just referred to and plant others,—some in coarse sand and some in loam. Allow them to grow and teach an elementary lesson on good and poor soils. Note depth of planting and show need of light to tops and leaves.

Let the garden work for this year be class and not individual gardens.

Fruits. Study a few fruits, native and imported: structure, edible portion, stones, seeds, etc., and use as food; care both in shipping and storing. Correlate drawing and arithmetic work. Conditions in lands where imported fruits grew. In same way a few of common garden vegetables, during market and growing season.

Common Animals. Review observation of pets in much the same way as in first year and extend to common domestic animals. Let the class find out what it can about wild animals related to pets or to domestic animals. Use for this purpose pictures, stories, etc.

Birds and Insects. Watch daily life of one or two well-known birds,—food, shelter, nest. Departure and arrival of a few common birds. What birds remain all winter? Observe.

Continue elementary study of insect life, aiming chiefly to teach pupils to recognize the common species. In a very general way, study the insects recognized: where found, what do they eat, how do they move, hide, etc. If possible find pupæ and watch emergence.

Aquarium. Start an aquarium in a small way; a collection of fruit jars will do if nothing better offers. Make a few trips to ponds and streams for water life and aquarium materials. Use May fly or dragon fly larvæ, polliwogs, pondscum, etc.

The Home. Review, going more into detail than last year: homes, building material, heating, ventilating, and conveniences, where materials are obtained, in a general way.

Clothing: source, cost, care, and making. Cotton plant: its home, care, and later history of the cotton. Simple ideas of transportation and industries again. Leather for shoes: source, making, in simple way. Visit shoe shop if possible.

Geography. Keep calendar again, of weather, and of birds going and returning.

Continue weather work on winds, clouds, storms, directions from which storms come, etc. Observe fogs, dew, frost, find snow crystals. Expansion of ice on freezing: effects. Sports and life in far north. Power of wind in storms; sailing vessels, windmills.

Continue the lessons on local geography: increasing area, new industries, roads, and surrounding places. Introduce idea of governmental units. Simple lessons on relief in connection with the new areas studied: streams, valleys, hills, etc.

Stories of other lands: people and conditions.

Simple observations of evaporation and drying, experiments showing effect of heat and wind. Connect with earth in fields and roads, home washings, etc. Evaporation cools: wet hands with water and other liquids.

THIRD YEAR.

Common Trees and Plants. Continue work of identifying and studying common trees. Review those of last two years. Choice of location; effects of wind, lack of light, and crowding. Include orchard trees. Buds, different coverings, and values; flower and leaf buds. Study modes of yearly growth on twigs and trunks in an elementary way. Terminal buds and their importance. Keep calendar of leaf fall and flower and leaf bud opening of different trees. Study means and importance of dispersal of several kinds of seeds. Plant nuts or other tree seeds in fall and watch results in spring and later years.

In connection with leaf fall study annuals, biennials, and perennials. Underground parts and storage of food there. Study examples used as foods,—turnips, potato, carrot, beet. Storage and care of root crop for winter. Bulbs, large bud-like underground parts; time and depth of planting and care of bulbs, as tulips, crocus, hyacinth,—compare onion. If possible plant in school garden in an elementary way. Need of sunshine, turning and arrangement of leaves as regards light.

Birds and Insects. Keep bird calendar; note leaving and return of birds; migrating habits, where and why; nesting; food; care of young. Learn new kinds. Value and protection of birds. Careful study for structure, habits, perching, flying, etc., of either chicken or dove. Care of young chicken and dove compared.

Continue work on insect life, putting more emphasis on habits and life history. Learn names for commoner and more important kinds. Elementary work on nests, wings, legs, stings, sucking and biting mouth parts, young and old forms, food, hiding places, eggs, enemies, benefits or injuries. Study

mosquito in aquarium, house fly, and bee; relation of first two to spread of disease.

Aquarium. Continue keeping aquarium and studying water life, plant and animal. Study frog and if possible work out life history in aquarium from eggs in spring.

Garden. Continue work of last year. Let the garden be a community and not an individual garden. Much of the spring plant work will need a garden. In addition, allowing the children some range as to choice, have them plant some early vegetables, such as radishes, lettuce, peas, etc., together with some early flowers adapted to the locality. Select for planting by the children such vegetables and flowers as will be likely to make a fair showing before the close of the spring term.

Domestic Animals. Study of cow as source of milk, butter, leather, meat, etc.: her food, covering, habits, structure, and care.

Simple problems involving cost of milk and butter. (See Arithmetic.) Visit dairy if possible. Stories of cattle countries. Continue work on other native and foreign wild animals, especially of cow kind.

The Home. Clothing study: sheep,—care, life, shearing, wool industry and woolen clothing. Rubber and rubber industry in same way. Use these to enlarge ideas of other lands.

Coal: kinds, where found, how used, transportation, mines and mining, miner's life. Stories and pictures.

Stoves and other methods of heating: uses of drafts, chimneys, etc., combustion; need of air; products,—up chimney and through grate. Effects of heat, in simple way, conduction, radiation, hot air rising (toys above stove), expansion, making steam and drying (recall and repeat work of last year on evaporation), softening of materials. Injury to seeds and plants. Connect winds and ventilation.

Cooking: what mother does in different cooking processes,—baking, roasting, boiling, etc.

Geography. Sun heating and lighting earth. Trace sun's movement with shadow stick, and work out reasons for differ-

ence in temperature of different seasons and parts of the earth. Learn to read thermometer and keep temperature record. Lessons on thermometer.

Home geography. Local products, minerals, lumber, crops, live stock, manufactures (industry studies). Used at home or sent away. How carried, where, what returned. Ideas of commerce and transportation.

Continue and connect with above, work on surface features of neighborhood. Rough and level areas. Streams and their work and influence, especially on roadways, commerce, and travel. Continue to develop idea of map and its uses by teaching and plotting local geography. Local government, especially parts affecting children. Obedience to law.

Elementary geography and idea of state: products, surface features, large cities, streams, lakes, industries, etc. Introduce in very general way larger and nearer land and water bodies. Teach neighboring states, large cities, and rivers. Simply, ocean commerce, and ideas of ports. Stories of sea. Stories of primitive people and people of other lands, becoming more definite as to location. Large cities of other lands.

Learn to distinguish the common metals,—iron, copper, zinc, tin, lead, aluminum; their properties—melting, bending, hardness, malleability, etc., and simple uses.

Continue and enlarge work on surface features of vicinity. Effect of water in wearing away, carrying and depositing soil. Stream bed, how formed, variety in fineness of material, roundness of boulders, shape of broken fragments on hill quarry or base of cliff. Relations of small and large streams, source of water between rains, springs, freshets and the changes they make. Here connect simple lessons on density or floating of bodies, and ease with which water moves, smaller and larger bodies. What sized particles are carried away?

Learn best moisture content, need of air, and loosening of soil. Simple lessons on soaking of water through soil,—up, down, and sidewise. Lessons on garden tillage: kind, depth, when, value, relation to plant roots and growth. Learn to distinguish different kinds of soil. See plant work.

FOURTH YEAR.

Common Trees and Plants. This year do little work with trees, but study vines and bush fruits and ornamental shrubs to know them and for habits of growth and multiplication. Make grape cuttings in fall, keep till spring, then plant, watch spring growth of grape. Where do flowers come,—old or new wood? Basis for pruning. Same for shrubs and fruit trees but no work on pruning fruit trees. In spring teach division of bush fruits for more plants. Same for other plants as rhubarb, canna, etc. Cutting of house and ornamental plants.

Garden. This year the individual garden may be begun (or the communal may be continued another year). Encourage home gardening. Start plants for transplanting inside, as last year. Give instructions and practice in planting these at home and school. In fall study especially the kind of vegetables planted last year. Winter storing and care of seeds and roots for next year. Give exercises in testing seeds of various kinds for purity and vitality,—use field crop seeds. Value of good seeds. Weeds and their harm. How scattered. Continue work on seed dispersal. Methods of combating weeds. In connection with garden work, write letters for seed catalogues, plan garden as to cost, number, relation, value, etc., of plants in early spring. Introduce practical problems in arithmetic in every way possible here, as in measuring beds, rows, computing areas, number of plants, value, etc.

If this makes too much work postpone part of it to the following year and continue communal work.

Study parts of flowers, get names and functions of stamens and pistils, pollination, fertilization, and importance; wind and insect pollination, all in simple way.

Aquarium. Continue aquarium work. Review frog life and study toad for comparison. Study fish. Review aquarium work for food and enemies. Study life from egg to adult in general way. Structure and fitness for water life. Connect with fish industry. Study fishing methods: great

fishing grounds, kinds caught, cleaning, and shipping. Use to introduce some new ideas and locations in geography.

Birds and Insects. Study birds especially from the economic standpoint. Protection. Where migrants spend winter and summer. Connect geography of these lands as to location, climate, etc. Special study of a flesh eater,—hawk or owl,—and of woodpecker.

Insects: special attention to economic aspect. More of structure and fitness to kind of life. How they feed: biting or sucking, on what; where they hide, how they spend the winter. Work out in breeding cages life history of cabbage worm in fall: feeding, growth, life cycle, where she deposits eggs, and where spends winter, simple methods of destruction. In spring find cocoons and watch them develop. Study effects and observe habits of any other insect that offers, as tomato worm, apple worm, borers, clothes moths, squash bug.

Domestic Animals. Make study of horse: structure, kinds, care, uses, foods. Connect stories of famous and wild horses. Study hogs: wild kinds, foods, habits, structure, uses. Connect with packing and butchering industry. Methods of curing meats, shipping, care in shops. Visit meat and fish market. Animal stories, especially of sea animals.

Geography. Develop idea of forest and prairie regions. (Animal industry and farming of prairie in elementary way.) Lumbering of forest region in more detail: kinds of trees used, how handled, where sold. Maple sugar industry of north, turpentine of south. Recall study of rubber of last year. Tanning industry, leather and shoe making. Visit mills and shops if possible.

Continue temperature reports, and observations of sun's movements, and keep records. Watch moon's phases and when they appear. In connection with sun's movements, notice seasons, variation in length of day, etc. (In a simple way.) Do not attempt astronomical explanations.

Circulation of air: winds and ventilation. Review evaporation and condensation work and add new ideas. Apply to foregoing and work on storms and rainfall.

Develop in connection with product and industry lesson, ideas of continents, oceans, countries, islands, peoples, and races. Study land and water forms, surface forms, especially if they can be illustrated in the neighborhood. Teach use of streams for commerce and power. Study dams, wheels, and other means of utilization of natural power. With all these parts of country and industries show our connection if any.

Get a few minerals and ores if possible. Study mining and smelting. Uses of metals studied last year, varieties of manufactured iron, and difference. Granite, and minerals of which it is composed. Means of disintegration. Limestone, slate, and sandstone if possible. Making, slaking, and use of lime; also cement and plaster of paris.

Dissolve salt, sugar, and other materials in water, evaporate and get crystals. Connect with soils and maple sugar work.

From study of rocks, get better idea of soil origin. Agency of water (especially in dissolving and freezing), plants, animals, in soil forming. Kinds of soil and mixtures of these kinds. Rise of water in soil and rate of soaking into. Amount of water held by different soils. Effects upon them when soaked and then dried. After solution work above, catch some water that has passed through the soil and evaporate to show minerals held in solution. Use a rich garden soil.

Plant food in water from soil. Air in soils: its value.

Simple work on relative density, buoyancy, size of soil particles carried.

Make this experimental and so far as possible let the pupils get muscular experience. For example, let them try to hold a cork, a small block of wood, a stone of same size two inches under water; let them try to push an empty tin cup and then a quart can or larger vessel under water without first filling it.

(This year should complete informal geography.)

FIFTH YEAR.

In the first four years, the work has been informal and with little effort at system. At this point the nature study, while

it still covers a wide range, becomes more systematic and less informal without becoming abstract or technical. Informal geography has given place to systematic instruction with a textbook basis. The study of plant life and the school garden come to have a more definite agricultural purpose; the bird and insect study are taken chiefly in the economic aspect. Elementary physical science growing out of informal geography becomes more definite and attempts to cover the range of the phenomena of everyday life.

The chief caution to the teacher is: Don't take this work so seriously as to run it into abstract or technical channels. Keep to the region of children's experiences; if you have to bring in much apparatus it is a good sign that you are attempting high school work prematurely.

Plant Life. Observe rings and methods of growth of trees. Use of bark. How trees may be injured. Learn to know a few of the more common woods by grains. Difference in grain. Uses of various kinds of woods. Source of kinds commonly used but not native. Practical care of the woodlot and young trees: start seedlings. Forest fire laws.

Continue study of bush fruits and ornamental shrubs and propagation by layerings, cuttings, etc., care and culture. Make special study of strawberry: habits, peculiarities, and culture. Lessons on potting plants and care of potted plants.

Time and method of planting, and care of garden vegetables and flowers in home and about yard.

Make special study of the potato: structure of part eaten, food value, how they propagate, growth, food storage, care, cultivation, best soil, care of crop after harvesting. Use United States Department of Agriculture and State College bulletins. If preferred, the squash or cucumbers may be substituted for the sweet potato. Learn all you can of markets and great producing regions. Introduce some commercial geography and arithmetic. (This and the following work will need to be taken up at various times during the year.)

Make as careful and complete study of corn this year as possible. Begin in the fall with stalk, roots, tassel, ear, etc.

Harvesting and storing. In winter: kernel, parts, kinds of corn (good, poor), leading to seed selection. Uses of. Planting and care. Its insect and other enemies. Include a little historical and geographic work.

Animal Life. Reptiles and batrachians as opportunity offers.

Rodents: rats, mice, squirrels, woodchucks. Injurious habits. Extent of damage to crops. Means of destroying.

Potato beetle: life history, injurious effects, destruction by spraying. Any insect enemies of corn which can be found. Study communal insects: ants, bees, hornets. Life histories and homes. Economic use.

Garden. The garden work this year should be individual if possible. If there is little room, let the vegetable gardens be individual and the flower or ornamental garden a communal garden. Seeds should be collected in the fall, tested for vitality and purity in the spring. Each pupil plot to scale entire garden: study seed catalogue, select seeds, talk over kinds of plants and arrangement in garden, etc. This gives an opportunity for training in foresight, management, ethics, and finances as well as in garden work. Pupils assist in laying out garden, prepare their own plot, and plant their seeds, following directions. Insist on orderliness in planting and later care of garden. Try to be able to recognize at sight a great many weeds of the farm, yard, and roadside; learn their habits, means of multiplication, and distribution, and how best destroyed. If there is room, start a wild garden of native plants.

Soils. Study the physical composition of various soils of the neighborhood: humus, clay, loam, sand, etc. Properties: do some soils hold water better than others, and why? Soil temperatures: light and dark soils; wet and dry; early and late soils. Teach, roughly, crops fitted to various soil types.

Fundamental principles of fertilizing soils: various ways in which manure is of value to soil.

Prevention of loss of soil by washing: by trees, grass, and proper tillage. Effect of loss of forest cover on washing of

soil. Note gullies made by washing in neighborhood and have children observe.

Elementary Physical Science. Simple machines: levers, pulleys, screw, windlass, windmills, and water wheels. Illustrate by common articles about the house, as, for instance, levers by the crowbar.

Friction: its values and disadvantages. Means of reducing friction.

SIXTH YEAR.

Plant Life. Continue work on structure and growth of trees: care of seeds and seedlings, methods of reforestation, care of the woodlot.

Care for grape and other cuttings made last year. Show how budding and grafting are done. Have pupils make their own materials. Practice on twigs indoors; later do the work outdoors.

Make a hot-bed in which to start plants this year; if possible, outside; if not, make one in a box inside (see drawings). The hot-bed may be of any length but should not be over four feet wide or the children will be unable to reach half way across. Let them dig the pit, make the frame (introduce arithmetic again), and other work if possible. Especially let them turn the manure and care for temperature, ventilating, and watering. Have them read directions for making a hot-bed in books or agricultural bulletins. Use the hot-bed for starting plants for the school or home garden or for sale.

Make plot, get seed, plan, prepare, and care for garden as was done last year. This year more attention should be given to new vegetables, to fertilizing, and reasons for cultivating. A common experimental plot in which the class try some vegetables or plants new to them would be helpful. If possible continue the wild flower garden, introducing into it all the chief plants of importance from the neighborhood. This is especially valuable in cities, where beside helping children in this grade to recognize the common wild

plants,—sumac, alder, clematis, golden rod, Solomon's seal, etc., especially spring flowers,—it will furnish materials for the teachers of lower grades.

Study a legume, as clover: its growth, seed, roots, care, fertilization, and growth of seed, harvesting, value as a crop, value to land, tubercles on roots and their work in a simple way. Compare other common plants throughout. Learn to know some other legumes. Make a review of kinds of plant roots, depth, etc. List after discussion all plants studied in previous years in the right group as to roots.

Study fungi: toadstools, molds, and yeast. Peculiarities of growth, reproduction, distribution, and life. Apply this year especially to distribution of molds and germs in home, mold in cupboard, on fruits, decay of fruits, souring of milk, "working" of fruits, use of yeast. Compare these plants with flowering plants. (See also Physiology and Hygiene.) Merely compare a few plant diseases, as smut, blackknot, rust, which will be studied next year.

Animal Life. Teach bird and game laws. Teach the reasons for these laws: wild creatures as part of the beauty of nature,—what would the world be without them,—connect with reading of "Black Beauty" and inculcation of humane treatment; birds as destroyers of insects and the most important friends of the farmer, fruit and flower grower.

Insects which are a menace to trees and crops. Prevention by spraying, burning, etc. Connect with last year's study of potato beetle. Gypsy and brown-tail moths: life history, identify nests and caterpillars for the latter especially; methods of control; organize boys to coöperate with town officers on a basis of payment for brown-tail moths' nests, if possible. Principle of parasitism.

Garden. The work laid out for fifth year should be carried on in this and in the subsequent years in much the same way, the range and efficiency of the work increasing as the pupils grow older.

Soils. Clay and heavy muck soils, study effects of wetting and drying, puddling and mixing while wet and then allow-

ing to dry, tillage of such soils, uses of clay and muck on sandy soils. Clay for brick and pottery making, effect upon these soils of adding manure, sand, and lime. Review water, movement in these soils. Compare with them sand and loam as to moisture, retention, and movements, baking and other physical properties. Learn sweet and sour soils, treatment.

Elementary Physical Science. Study pressure in fluids in a simple way. "Suction": air has weight, pressure of water due to height of column, city water works system, arrangement of parts, siphon, pumps. Floating of bodies: boats, ships, balloons. Pressure on bodies below water: diving bell. Compression of air: popguns, airguns, bellows, football, fire engines, gas tanks, hydraulic press, ventilating systems. The spirit level and leveling: compare leveling by the plumb-bob.

Begin chemistry here with a few simple experiments. Heat from chemical action, as slaking lime, diluting sulphuric acid. Distinguish acids, alkalis, and salts. Action of acids on metals, minerals, etc. Effects of lime and wood ashes on sour soils. Some simple chemical combinations and the formation of new substances as, for instance, iron filings and sulphur heated together in a test tube; dilute sulphuric acid and copper; carbonic acid gas (from the breath) and lime water; suffocating odor from burning sulphur match, due to combination of oxygen in the air with sulphur,—and many others which the alert teacher can work up, especially if she is within reach of a high school laboratory.

SEVENTH YEAR.

Plant Life. This year emphasize tree and orchard work. Tree planting: arrangement in orchard. Tillage. Plant diseases. Insect enemies. Sprays and spraying. Pruning and care of wounds. Review budding and grafting. Picking, packing, care, and sale of fruit. Removal of injured fruit and general care of orchard.

Tillage lessons: good and poor tillage; benefits from good tillage. Drainage: need and uses. Teach by indoor experiments as much as possible.

Study farm machinery of this and other lands. When possible contrast old and new. Pictures and descriptions must take place of objects to large extent. Plows, cultivators, and harrows. Harvesting, mowing, and threshing machinery, manure-spreaders, sprayers, windmills, gasoline engines, etc. Catalogues from implement firms will help here.

Teach forest fire laws and regulations. Dangers and losses from forest fires.

Elementary Physical Science. Behavior of magnets and magnetic needle. Simple phenomena of static electricity: glass or amber objects and pith balls or scraps of paper,—snap from rubber comb when passed through the hair.

Set up a simple cell and show the current from it.

Obtain one or more dry cells and some insulated wire. With these materials can be shown: different ways of connecting cells, insulation, making and breaking the current, push buttons, electro magnets, electric bells, telegraph instruments, and (if a small lamp be obtained) the incandescent light. Also there can be shown in principle how wiring is done for call bells, household electric lights, etc.

Preparation of carbon dioxid and lime water. Test for carbon dioxid. Chemistry of combustion: change of solids to vapor and gases. In connection with chemistry of combustion use or call attention to various fuels and their values: gas, oil, alcohol, wood, coal, etc. Preparation of oxygen, nitrogen, hydrogen. An acquaintance with all chemicals used in this work. Apply as much as possible to daily experience.

Have each person in this grade write to the State College and the United States Department of Agriculture for at least one bulletin from each and after reading make a report of the bulletin to the class.

Garden. See Sixth Grade.

EIGHTH YEAR.

Study horse and cow, dairying and general economy of live-stock on the farm.

Horses: learn names of parts, points of a good horse, commoner faults and blemishes. Types of horses: draft (light and heavy), drivers, etc. Principles of harness and fittings. Care of horse on road and in barn. Learn meaning of pedigree and common breeds.

Cattle: learn points of dairy and beef types of cow. Some breeds of each type. Good and poor cows of each type. How to test the cows. Care, feeding, housing, cleanliness.

Feeds and their values. Harvesting, curing, storing, and feeding of feeds. A balanced ration: its value. In care of animals, planning of barns and buildings may be taught. Plan, draw to scale, work out lumber needed, costs, etc., as time will permit or interest of pupils will warrant.

Sanitation of house, barn, and farmyard.

Dairying. For different purposes (connect with cattle work). Care of milk, cream, butter. Study of machinery for small dairy on farm. Selling and shipping milk and butter. Review work on bacteria.

In all this work introduce practical problems for illustrations wherever possible.

Care of manures: value, how, when, and amount to apply. Fertilizers: different kinds and what they furnish. Value to plants and soils. Sources. Application to fields and different crops.

Continue work in electricity begun last year. Pay attention to and study to understand new inventions of interest, scientific explorations, discoveries, etc. Learn something of great scientists whose names are met with.

Some elementary work on light: travels in straight lines, variation in intensity with distance from source, shadows, eclipses, reflection and mirrors of various kinds, when they reflect, refraction, lenses, and apertures. Prism and spectrum. Teach lens work in connection with eye and care of eyes; the stereopticon, magnifying glass, and camera.

Chemistry of respiration and digestion in an elementary way. Tests for starch, sugar, oil, protein. In connection with these tests simple chemistry of foods, cooking, and digestion may be taught. Illustrate plant fiber. Test various

foods and animal feeds for these. Use these experiments in connection with other work of grade.

Have each pupil in this grade send for and use bulletins as in the Seventh Grade.

Garden. See Sixth Grade.

REFERENCES.

The list of books helpful in this work is so large that space forbids any but a very incomplete list. Holtz's Nature Study, Scribners, and Coulter and Patterson's Practical Nature Study, Appleton, each contain extensive and excellent bibliographies. All publishers will gladly send lists of books to teachers if requested to do so. Every teacher should send at once to the United States Department of Agriculture, Washington, D. C., for Bulletins 186 and 195, which will be found useful. The first five books will be found especially helpful. A good text in botany, zoology, physics, chemistry, agriculture, and geography should be in the personal library of every teacher.

Practical Nature Study, Coulter & Patterson.....	Appleton
.....	Appleton
Nature Study, Holtz	Scribners
Nature Study and Life, Hodge.....	Ginn
Principles of Plant Culture, Goff.....	.....University Coöperative Co., Madison, Wis.
The First Book of Farming, Goodrich.....	.....Doubleday, Page & Co.
Foundations of Botany, Bergens	Appleton
Textbook of Botany, Coulter	Appleton
Plants, Coulter	Appleton
Introduction to Botany, Stevens.....	Heath
Botany, Bailey	MacM.
Lessons with Plants, Bailey	MacM.
Seed Dispersal, Beal	Ginn
Seed Babies, Morley	Ginn
Seed Travelers, Weed	Ginn
Bacteria, Yeasts, and Molds in the Home, Conn...	.....Ginn

- Principles of Vegetable Gardening, Bailey ..MacM.
 The Nursery Book, BaileyMacM.
 A First Book of Forestry, RothGinn
 A First Course in Biology, Bailey & Coleman....
 MacM.
 Zoology, Linville & KelleyGinn
 Natural History, HornadayScribners
 Elementary Zoology, KelloggHolt
 Animal Life, Jordan & KelloggAppleton
 Familiar Animals and Their Wild Kindred, Mon-
 teithA. B. C.
 Wilderness Babies, SchwartzL. B. & Co.
 Farm Animals, WilcoxDoubleday, Page & Co.
 Types and Breeds of Farm Animals, Plumb..Ginn
 Handbook of Birds of Northeastern North Amer-
 ica, ChapmanAppleton
 First and Second Book of Birds, Miller..H. M. Co.
 Birds of Village and Field, MerriamH. M. Co.
 Bird Charts, AudobonPrang Ed. Co.
 Bird Chart, Mumford ...A. W. Mumford, Chicago
 Studies in Insect Life, HunterCrane & Co.
 Life Histories of American Insects, Weed ..MacM.
 Insects Injurious to Vegetables, Chittenden
Orange Judd & Co.
 Economic Entomology, SmithLippincott
 Feeding Farm Animals, Shaw ..Orange Judd & Co.
 Agriculture for Beginners, Burkett, Stevens & Hill
 Ginn
 Practical Agriculture, WilkinsonA. B. C.
 Elements of Agriculture, Warren.....MacM.
 Rural School Agriculture, Davis, Orange Judd & Co.
 Soils, FletcherDoubleday, Page & Co.
 Soils, BurkettOrange Judd & Co.
 Rocks and Minerals, FairbanksEd. Pub. Co.
 Home Geography for Primary Grades, Fairbanks..
Ed. Pub. Co.
 Home Geography, TraegerAppleton
 Chemistry of Common Life, Johnston ...Appleton

CHAPTER XVI.

HANDWORK AND MANUAL TRAINING.

The central purpose of handwork is educational rather than utilitarian. It is intended to be continuous with the kindergarten, although it is not necessary that there should be a kindergarten as preliminary to it. It is valuable because it serves as a partial modern substitute for the handwork which all children of earlier generations had on the farm and in the household, and which in itself was of profound educational value. It is valuable because it rounds out education by training a child in the use of his hands. If well done it reacts on other school work by improving the quality of such work, especially in the case of arithmetic.

It is commonly supposed that "manual training" is a term limited to the carpentry of the upper grammar. On the contrary, manual training can and should begin in the first grade, where cutting and pasting is just as truly and just as effectively manual training as is the wood work of the upper grammar.

It is, of course, desirable that a special teacher should be employed, but such a teacher is not absolutely necessary. The regular teacher who is enterprising and intelligent can get results which are far better than none at all, and the graduate of normal schools of the grade of Plymouth, who have had regular instruction in manual training, should be expected to conduct the work without difficulty.

The course here outlined is merely suggestive of what can be done in every school. It is not worked out to the extent of detail needed in a city system under a regular teacher.

FIRST AND SECOND YEARS.

I. *Freehand cutting and pasting.*

Materials: white and colored papers and scissors.

Forms: flowers, leaves, fruits, vegetables, house, barn, house furnishings, animals.

Illustrating stories and incidents of child life. See also expressional language, history, drawing, and arithmetic for correlation and for material for illustration.

NOTE.—Do not give pupils figures outlined in pencil by the teacher, which they are to cut out following the teacher's lines. Also avoid mere cutting out of figures from printed sheets, such as fashion plates. Sometimes, as for instance in the geography of the lower grammar, such work has a value entirely apart from manual training. Here it is much better to accept the child's crudest efforts at representing objects by paper cutting. They are of much more value, educationally, than the more finished work, because they represent an activity which is capable of growth.

II. *Cardboard.*

Furnishings of doll's house, pilgrim's house, Dutch windmill, cradle, and similar objects familiar to the life of children and correlations with the history stories, nature, etc., of this year. Observe the same principles as in paper cutting. (See Note.) Allow the children the widest liberty of invention possible. Remember that you are not training them to be experts in making cardboard doll's furniture but rather are allowing them to make doll's furniture in order that they may acquire power to do something more important. On the other hand, avoid the opposite extreme of allowing the pupils to cultivate the habit of slovenliness.

III. *Clay-modeling.*

Fruits, vegetables, animals, and other familiar objects.

Precisely the same principles may be followed as in the case of paper cutting. The chief difference between the two is that modeling calls for the use of different muscles, used in a different way, and, therefore, a new means of expression.

Clay can be obtained from the regular dealers in supplies, or often from a nearby exposed clay bank.

THIRD AND FOURTH YEARS.

I. *Cutting and pasting.*

II. *Cardboard.*

Work of lower primary continued. The children in these grades will naturally come to the power of doing more skillful work, but yet skill is not the thing to be aimed for. Be sure that you secure from each pupil his best effort. That will be sufficient. Attainment is of little consequence here; effort on the pupil's part counts for everything.

III. *Raffia.*

Braiding and sewing into mats, baskets, hats.

IV. *Reed work.*

Toward the end of the fourth year for basketry.

V. *Weaving.*

Designing and weaving simple fabrics on hand loom. Looms and materials can be purchased at little expense from the regular supply houses.

FIFTH YEAR.

During this year it may be found well to begin to differentiate the work for boys and girls, although this is not imperative.

I. *Raffia, weaving, and reed work.*

Continued and adapted both to stage of pupil's development and the new possibilities of correlation in the work of this year.

II. *Leather.*

Small articles such as penwipers, book covers, etc.

References for the teacher.

Industrial Social Education, Baldwin.....
Milton, Bradley & Co.

Place of Industries in Elementary Education, Dopp	
.....University of Chicago Press	
Seat Work and Industrial Occupation, Gilman &	
Williams	MacM.

WOODWORKING, SEWING, AND COOKING.

The manual training of the three upper grades becomes more specific and definite in character so far as the materials are concerned than the previous work. Woodwork for the boys and sewing and cooking for the girls are recommended. The purely educational purpose is still dominant; the development of expert skill has no place. The elementary school cannot assume to be competent to train efficient carpenters nor cooks nor seamstresses. It would not probably be desirable even if they could. That is the business of the trade school. These subjects as parts of the public elementary school program are valuable because (1) they develop some of the higher coördinations of brain and muscles; (2) because they satisfy a particular instinct for self-expression which ripens at about this time (a boy who does not begin to use these tools will probably always be clumsy with his hands; a girl who does not begin to cook and sew now will usually never do so with pleasure nor to profit); and (3) because they put pupils in concrete relations with the working industrial basis of the modern world.

The cautions implied above and stated in connection with the earlier parts of this curriculum should be observed by the teacher. That is to say: give the boy the privilege of constructing some article of interest to him which he intends to use and which is within his powers rather than holding him to practice on sawing, planing, and making joints until he is perfect in these things; start the girl upon some article within her powers rather than keep her on abstract exercises until she can do them perfectly. By the former treatment you have left room for both boy and girl to grow indefinitely; by

the latter you would fix them at a definite point of skill which might improve within its narrow limits, but which would leave them incapable of growth in this kind of intelligence. The former can produce some degree of industrial intelligence, but not expert skill; the latter expert skill at the expense of intelligence. The former belongs in the school; the latter to the apprentice class in the shop.

Equipment for woodworking for a class of twenty costs about two hundred dollars, exclusive of fitting up room; crude but serviceable equipment can be managed for much less. Equipment for sewing room and kitchen for the elementary school will cost one hundred dollars or less.

Note particularly that a regular special teacher is not a necessity except in the larger towns and cities, and there only for administrative reasons. Graduates of the Plymouth Normal School should be entirely competent to handle the woodworking, and presently the school will be able to prepare all graduates for teaching sewing and cooking in the elementary schools.

WOODWORKING.

SIXTH YEAR.

I. Require each boy, before beginning work on the article which he wishes to make, to prepare a sketch, and details if needed (not a working drawing), showing his idea and how he intends to work it out; to figure all dimensions and the stock needed for construction. In a word, require him to form the habit of judging beforehand where he is coming out.

The teacher should decide whether a given project brought in by the pupil is or is not within the pupil's powers. Do not allow pupils to undertake work upon which they are bound to fail.

II. Tools: the rule and pencil, try square, knife, saw, small plane, chisel, bit and brace, draw shave and spoke shave, and hammer. The teacher will instruct in the proper handling and use of each.

III. Models suggested: penholder, plant stick and marker, cord winder, simple boxes for various purposes, bird houses, sled, cart.

The above are purely suggestive, as showing the proper scope of the work of the year. In practice, the class ought to be led to suggest its own models according to the felt needs of individuals,—for instance, nearly all boys of this grade will think they want a sled of some kind.

Require of each his best effort. Allow no slovenly habits to creep in.

SEVENTH YEAR.

I. See remarks (I) under sixth year work. During the year introduce simple blue-print working drawings and teach the boys to follow the working directions. *Note especially* that all work undertaken must be planned, sketched, and figured by the boys to the satisfaction of the teacher before being touched with a tool.

II. Tools: the tools of the sixth year with the addition of the marking gauge, gouge and graving tools, larger chisels, special forms of saws, planes, glue pot, etc. See note (II) under sixth year.

III. Models suggested: pen tray, bracket shelf, bill file, drawer pull, water mill, book rack, coat hanger, plant stand, etc. Read carefully comments at beginning of chapter and especially (III) under sixth year.

EIGHTH YEAR.

I. See remarks under sixth and seventh years and carefully observe. The boys can now work up some of their simpler sketches into working drawings; and for this purpose they should be required to construct their own drawing boards and T squares.

II. Tools: same as last year with the addition of the commonly used tools of the cabinet maker which have not hitherto been mentioned; also wood lathe, either foot or power.

III. Models: largely cabinet and furniture making. Construction of bookcases and other cabinets needed in the schoolhouse; construction of similar needed at home. Furniture making and repairing,—review reed and leather work and extend for application to chair seating and reseating. The work of the year might be characterized as the construction and repair of those articles of furniture in common use in the school and the home which are within the powers of the pupils. Connect with the nature study of the seventh and eighth grades. The boy of fourteen who cannot do a respectable piece of tinkering about the house when called upon is on the road to failure in life.

SEWING.

The purpose of sewing corresponds closely to that of wood-working for boys, and much the same principles should be observed in laying out and teaching courses under this curriculum. See preliminary notes on manual training and also notes before the beginning of outlines for sixth year. A difference is to be found in the fact that girls will probably put their sewing to immediate practical or technical use and for that reason more attention to the development of skill as such is justified.

In the teacher's purpose and instruction, two extremes are particularly to be avoided. In the first place do not attempt to turn out pupils capable of at once taking places for hire as seamstresses. You cannot do it anyhow. That is the business of the girls' trade school. In the second place, do not attempt work which is beyond the capacities of girls of grammar school age and which properly belongs in the domestic arts curriculum of the secondary school, such, for instance, as designing and drafting garments, the study of fabrics and textile machinery; or, in cooking, more than the merest elements of the chemistry of cooking or domestic economy. Pupils may seem to produce results in such higher work, but usually they will be found to have been mere copyists.

SIXTH YEAR.

I. Basting, backstitching, overcasting, hemming, overhanding, feather stitch, catch stitch; applications to various seams.

II. Buttonholes, patches, and stocking darn. Instruction in right method of handling work.

III. Suggested models: apron, hemming towels, pillow slips, flannel skirt. As in the case of woodwork, which see, no specific routine of models should be adhered to. Every girl should have some article or several articles which she herself needs or which are needed at home, which are within her powers at this time, and from the first such ought to furnish the basis of work. Without this close, concrete relation to experience the sewing will be likely to prove useless. *Note particularly* that every girl from the first should be required to sketch the article she proposes to make, to estimate cloth required, and to figure the cost.

SEVENTH YEAR.

I. Hemstitching, French and fell seams, white flannel darn, cashmere darn, neck piece, cutting and fitting bias band.

II. Cutting from pattern.

III. Suggested models, in addition to those of the sixth year: hemstitched pillow slips, underclothes, waists, and skirts. See note (III) on sixth year and observe carefully. Every home can readily furnish, and every mother will be glad to furnish, an abundance of actual sewing and darning as the basis of the school work, as soon as she finds that her daughter can be trusted with the work at school. Here is an opportunity for the teacher to use her school as an additional force in social betterment.

EIGHTH YEAR.

I. Use of sewing machine and attachments.

II. Cutting to pattern and taking measurements.

III. Study of structure of cotton, woolen, and other fabrics.

IV. Laundering and cleaning dress goods.

V. Simple dressmaking and sewing upon garments from home as in VI and VII. See notes.

COOKING.

See notes on woodworking and sewing.

SEVENTH YEAR.

I. Care and cleaning of range, sink, floor, refrigerator, garbage pail, cabinets, and utensils. Constant instruction in the sanitation of kitchen, pantry, and environment.

II. Principles of construction and operation of coal or wood range; draft and regulation of same for different kinds of fire; the oven and movement of hot air currents about it. Gas or blueflame range; method of vaporization of kerosene and gasoline and control of the same, explosive mixture, principle of the Bunsen flame, air supply, and correction of flame "striking back." Laying fire and making range ready for cooking.

III. Right handling of measures and other utensils.

IV. Cooking: general principles to be observed in the cooking of proteids, carbohydrates, and fats, taught by concrete illustration.

Preparation of cereals, light and hot breads, simple meats, fish, cakes, and vegetables.

V. Setting table and serving.

VI. As the work progresses, in this as in woodworking and in sewing, the teacher should make every effort to relate it correctly to some regular experience in the household or in the school; the preparation of food which is, as a matter of course, to be eaten. In some schools it is possible for the girls to carry on a noon lunch enterprise under the direction of the teacher. This is especially advantageous in that it gives a chance for real study of the economy end. In

other cases, a little enterprise will make neighborhood co-operation possible. One school has carried on a regular preserving business in the fall term by notifying neighbors and friends that the class would preserve fruit free of charge if furnished the raw materials. The same school has at other times prepared meals upon being furnished the raw materials and sent out the cooked product.

EIGHTH YEAR.

I. Review and repeat I-III and V from seventh year.

II. Designing menus for different meals, figuring cost, and estimating food values. (Do not attempt systematic study of latter.)

III. Marketing.

IV. Preparation of food from list under (IV) seventh year as called for in cooking menus designed under II above. Preserving and principles of sterilization, frozen dishes, salads, and dressings.

V. Carry out instructions of (VI) under seventh year.

CHAPTER XVII.

RECESS PLAYS AND GAMES.

The recess problem is always an important one in the routine of school management. The traditional attitude of the teacher toward recess is that this is her opportunity for idleness, and a care-free attitude; that, so far as the pupils are concerned, they are free to do pretty much as they please. The result is often rioting and brutality on the part of the children, which lead to trouble with neighbors and the parents of the younger children, and usually, at the least, a spirit of turbulence which passes into the school room itself and destroys whatever good results have come from the teacher's school management.

On the other hand, a recess period of well regulated plays and games, in which the teacher takes part, gives her a control over the children which she could not otherwise secure, provides a period of really healthful relaxation and recreation in place of the contamination of various degenerative tendencies, and in itself proves quite as educative as any other period of the day. The remoter results are a group of children of increasingly courteous behaviour at home and on the street. On the one hand is a school which is orderly under restraint, on the other a school of a growing, healthy school spirit.

It is not necessary to explain the theory of the educative value of plays and games. Suffice it to say that students of educational psychology have pretty well established the principle that the plays and games have an exceedingly important part in moral as well as physical upbuilding, including even the laying of the groundwork for patriotic impulses. Any play instinct unsatisfied at its nascent period leaves a

weakened physical and mental organism, easily perverted in later years. The teacher should consult the works of Gulick and of Johnson, Ginn, particularly the latter's "Education by Plays and Games" and "What to Do at Recess."

The outlines of this chapter follow Johnson largely and have been tested out with good results in the schools of Berlin.

Play must be as nearly free and spontaneous as possible; the teacher leading, not directing.

The way to start a new or an old game is for the teacher to commence playing it with whatever children are at hand and ready to join her, others will fall in fast enough and the whole will be spontaneous and natural. If, however, the mistake is made of first formalizing the game, reducing everything to a mechanical exactness, it will surely require a truant officer to keep the children on the school grounds, as it now does to keep them in school.

A LIST OF GAMES FOR RECESS USE.

GRADE I.

"Blind Man's Buff."

A sense training game especially adapted to Grades I and II.

Pupils join hands in a ring with the blindfolded one inside. The teacher then touches from two to six pupils, according to the size of the ring, and these, leaving the circle, move freely about in the ring. *It* must tag one of these and by the sound of the voice or by the sense of touch must identify him. If correct, the one tagged becomes *it*, all the others forming into line again until the new *it* is blindfolded and the game repeated.

Modification (a). *It*, being blindfolded, is gently turned around two or three times. The teacher then names some pupil in the ring and *it* must go to the point where he thinks this pupil is. If he locates the right one they exchange places and repeat, but if the location is wrong then the one named says, "Here am I," and *it* tries again.

Modification (b). *It*, blindfolded, stands in the center of the ring; then the teacher directs the ring to circle about until the positions are changed, or the "grand right and left" movement may be substituted for the "All hands around." When a halt is called the blindfolded pupil goes to the ring and touches some pupil, who says, "Who am I?" or "Good morning." If *it* recognizes the voice correctly and names the speaker, they exchange; if not, *it* tries another pupil.

The identification may be by touching the clothing, hands, or hair, thus training the sense of touch.

"Drop the Handkerchief."

Form a ring facing in. *It* passes around the outside and slowly drops the handkerchief behind some pupil. This pupil, as soon as he sees the handkerchief, must pick it up and going the opposite way to *it* they race for the vacant place in the ring. If *it* gets this first then the other becomes *it*, if not, the first *it* tries again.

Running is the chief activity here but attention is also necessary and the elements of competition in the race are introduced.

GRADE II.

Sense training games still continue as in Grade I, while "Drop the Handkerchief" becomes the leading game.

"Cat and Mouse."

Form a ring with hands joined; the cat, who is *it*, is outside the ring and the mouse is inside. The cat must tag the mouse but those in the ring favor the mouse by holding hands and arms so as to keep the cat from breaking through, or if he does get inside the ring raise their arms to let the mouse out. Thus *it* strives against the ring and the mouse.

When the cat tags the mouse the latter becomes cat and the new mouse is selected, or both may join hands and a new cat and mouse be taken, the first two who failed to keep the cat from breaking through the line being the ones selected. The teacher decides this point.



CAT AND MOUSE.

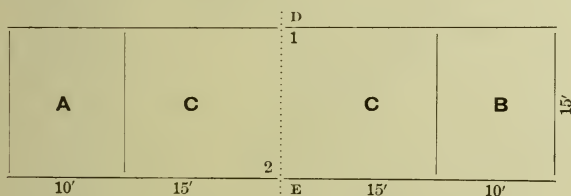
GRADE III.

The tag and simple aimless running games are becoming too elementary now and if persisted in will result in the "fraid cat," milksop, and "Miss Nancy" later on.

It is the shock resisting, temper trying, "grit" developing game that is useful now,—impact games where bodily comfort depends upon the exercise of foresight.

Dare Base.

This is an ideal game for this grade and the next. The ground is laid out as in the diagram but the dimensions may vary greatly to meet conditions.



DARE BASE.

A and B are goals in which the opposing groups start. DE is the base line, where the two catchers are to stand, that is, at 1 and 2. At a signal the A group must pass over to B and the B group to A, and while thus crossing the space CC any player may be tagged by either catcher, except that nobody can be tagged when actually standing on the line DE.

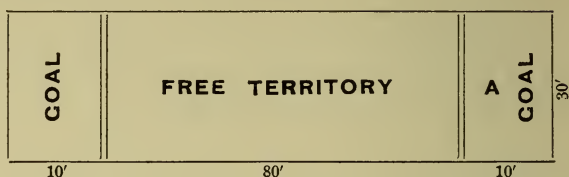
Any player tagged on the free spaces C, C, must retire from the game. No player may turn back after once leaving a goal but must pass over to the other side; he may rest a moment on the base line if necessary. Not more than ten players should be on each side. The side whose players are all tagged out first is the loser.

A new game is started by taking the first two tagged for the catchers.

Boys and girls alike play this game.

Hill Dill.

This is a progressive modification of Dare Base, or at least is a suitable game to follow it.



HILL DILL.

In this game the ground is laid out as shown, but any reasonable dimension will answer, of course. The players mass in one goal and the catcher stands in the other goal as at A. The catcher says "Hill Dill, come over the hill" and all start for his goal. The catcher tags any player in the "free territory," and as soon as one is tagged he becomes a catcher and at once commences to tag others. When all are either tagged or in the new goal the catchers line up opposite and the same process is repeated. The one tagged last becomes the new catcher for the next game. In some cases it is best to take the one first tagged instead. It will readily be seen how these last two games lead directly to football and basket ball.

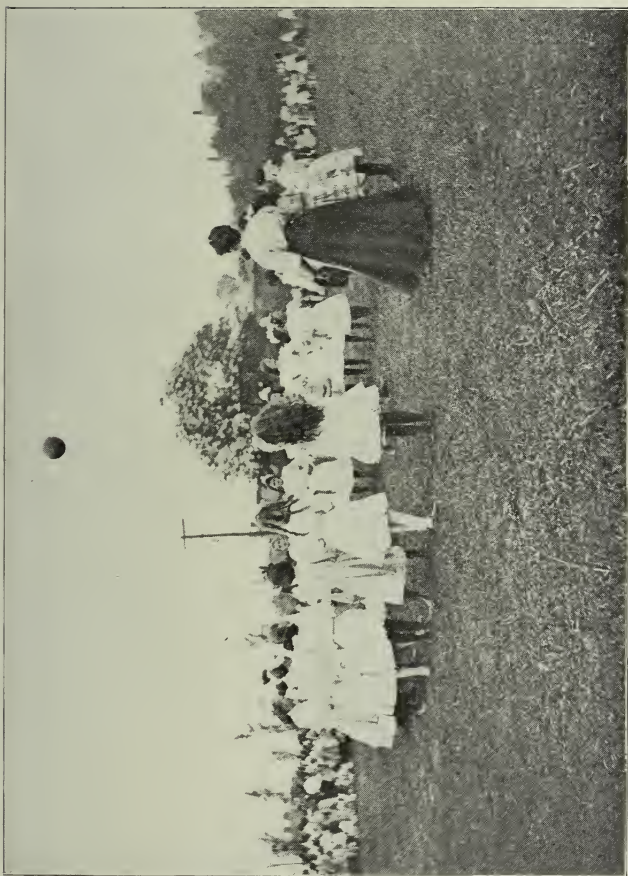
Catch Ball.

A ball made from an old sweater or jacket tightly rolled and tied into a spherical shape, say eight inches to ten inches in diameter, will serve, though a medicine ball or football is better. The players form a circle with *it* in the center. *It* tosses the ball quickly to some player who must catch it. If he fails he becomes *it*; if not, the original *it* tries again. Quick passing in unexpected directions gives life to this game.

Modification (a). *It* tosses the ball up and at the same time calls the name of a player who must catch the ball or become *it*.



HILL DILL.



CATCH BALL.

Circle Ball.

A medicine ball, football, or an old jacket or sweater tied up into a spherical bundle is all that is needed in the game.

Players form a circle but do not join hands, and they stand far enough apart to let the catcher and chased pass freely through. *It*, with the ball in his hands, stands in the center of the ring. He tosses the ball to any player, who must catch it and place it on the ground in the center of the circle, and must then chase *it* and tag him before he can get to the ball and touch it. If *it* does get to the ball before being tagged, then he goes into the line and the one who was chasing him becomes *it*.

The progressive development of these two games is readily seen, as well as their relation to basket ball and football.

GRADE IV.

This is the age when pupils begin to "group up." Girls "pledge" themselves to keep "secret" very important confidence. Imagination runs riot. Boys organize expeditions, become Indians, pirates, build camps, dig caves, etc. It is a melodramatic, uncanny, mysterious, glorious, golden age,—a hero-worshipping period when victors are looked up to. The games now ought to give some opportunity for individual prowess. "Hill Dill" is good. "Center Ball" excellent. "Relay Races" of short duration valuable when sparingly used.

Bull in the Ring.

Form a ring; hands tightly grasped. The bull, inside the ring, rushes the line to break through. Hands must hold tight. If he does break through all join in a chase and the one who catches him first becomes the bull. Here the hero idea predominates.

One-Legged Race.

Competition and coördination are involved. A line of boys hop on one foot over a given course not over thirty feet. This game is sometimes rendered injurious by allowing

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players to always hop on the right foot; first the right and then the left should be used in the various trials.

Three Deep.

This is a game requiring "head work."

A ring of players forms facing in and at least two feet between players; behind these a second ring forms. This second ring consists of the same number as the first, so that one player stands behind each in the front row.

There are two free players, a chaser and the one chased. The chaser is *it*. *It* tries to tag the other, who runs to keep out of his way. The chased has the privilege *at any time* of stepping in front of any member of the inside ring, and when he does so the outside one of the *three* now in line must become the chased. In this way all must be intensely attentive, for *it* is looking for this third or outside boy to tag him.

Wherever *it* tags the runner or the third player, who ought to be running but has forgotten to do so, then *it* becomes the runner and the one just tagged becomes *it*.

Skill in quickly stepping into a front place and quickness in seeing this, on the part of the *third* in the row, makes this a very exciting game.

GRADE V.

The characteristics have not changed much except that co-operation and competition have become more pronounced. "Hill Dill," "Three Deep," and "Bull in the Ring" still serve.

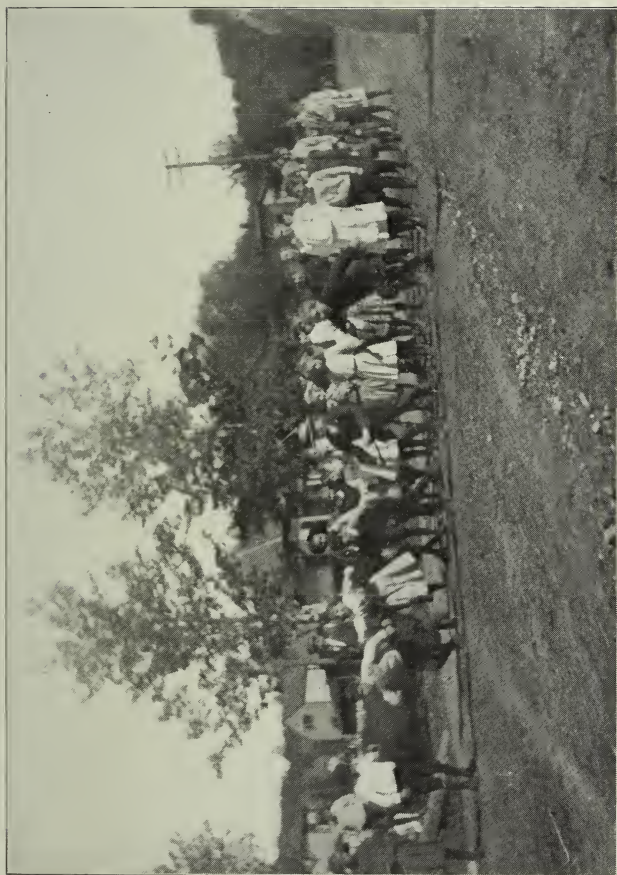
Relay Race.

Arrange two or three parallel rows of players facing one way.

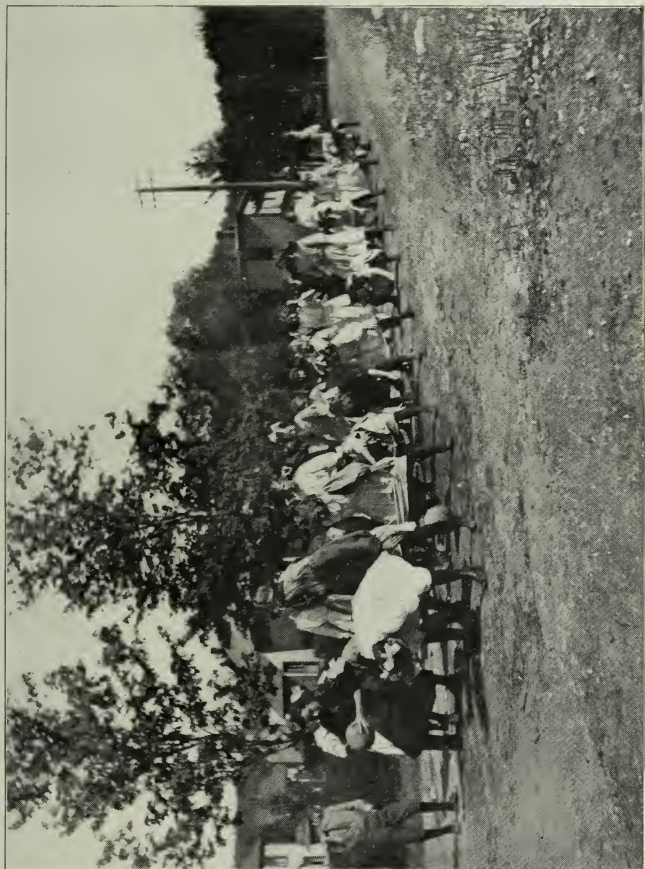
Fifty feet or less ahead of each row place a goal keeper. At a signal the front player in each row runs to his goal keeper, touches his hand or passes completely around him, and runs back to the rear of the line from which he started. On his way he passes a stick or flag, which he has held in his hand from the start, to the front player in his line, who at



THREE DEEP.



RELAY RACE.



STRIDE BALL.

once repeats what the first player did. Thus each pupil runs from the original front line to the goal and back to the rear. When the last one in the line has touched the goal and returned the flag or other object to the player who first started, the game is finished, and the line of players finishing first are winners.

Stride Ball.

Two eight-pound or ten-pound medicine balls are needed for this, but a rag ball can be made and covered with heavy cloth or canvas, which will cost nothing and answer very well.

Two lines are arranged side by side all facing the same way. The feet are placed wide apart so that the ball can be rolled between the rows of legs on either side. The players should stand just far enough apart in line to be able to touch each other when the arms are extended in front. The front player in each line has the ball and all the players bend forward so that the hands nearly come to the ground. At a signal the front players roll the ball backward between the legs and each player gives it a shove, if necessary, to keep it going. When the last player in the line gets the ball he runs to the front and repeats the process, and so on until all the players have had one chance to start the ball. When the player who first started the ball on either line has returned to the front with the ball the game is finished.

The players move back a step each time while the ball is being brought to the head of the line so that the head of the line always is at the same place.

If a ball rolls outside the line of feet it must be returned to the place where it left the line and be started again.

This is one of the best fifth grade games in the whole list.

Jumping.

Standing and running broad jumps, "hop, skip and jump," standing and running high jumps, are all excellent for this grade.

GRADE VI.

Now for the first time boys and girls part company in most of their games. The "clan life" of the race is being reenacted. "Gangs" are apt to be formed and it is the teacher's business to so open opportunities that this instinct is exercised in games of group competition. "Stride Ball" seems to fail in this grade. With the tendency to organize and roam about, comes the desire for intense physical activity.

Relay Races.

A run around some road, park, or along streets that give from one sixth to one half mile provide room for this race, or it may be a "straight away and back" race of one fourth to one half mile. Two or more boys start, each holding a piece of wood or a small stone in his hand. The first group run, say, a hundred yards, to another group of equal number, each handing his block or stone to his mate. The second group then runs a hundred yards more to another relay, and so on until the last group is reached; these turn back and the process is reversed, the group first starting finally returning to the starting line. The boy first in wins the race for his set.

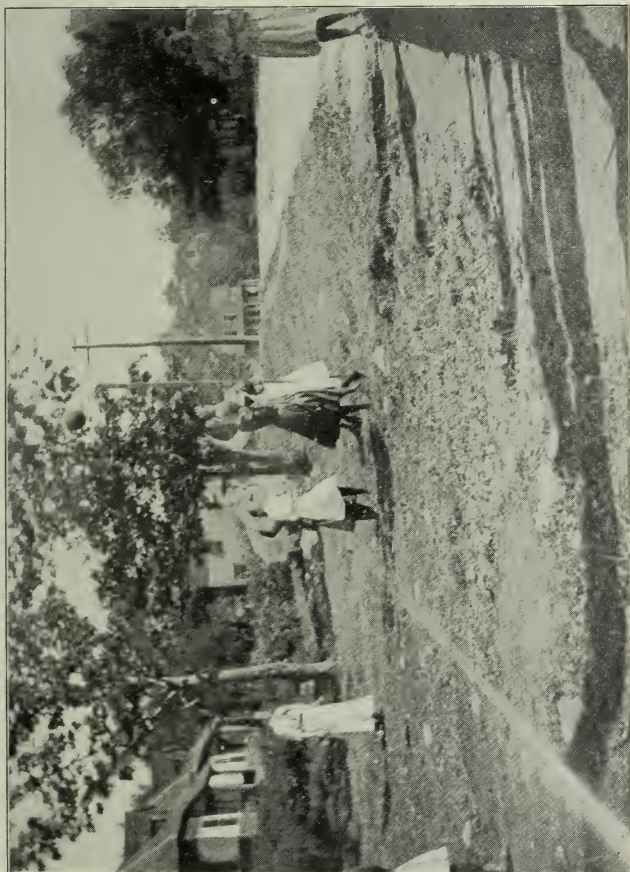
Girls may use this same race, making the distances short, not more than one hundred feet to each relay.

Sheep Fold.

This is a good game for both boys and girls, especially the latter. Form a ring as in "Cat and Mouse," the sheep inside and the wolf outside. The wolf must tag the sheep, so he tries to break in, the ring meanwhile striving to hold hands so as to prevent. If he does break in, the ring opens to let the sheep out but closes again to keep the wolf in. When the sheep is caught the two who permitted the wolf to get in or out must take their turn as wolf and sheep.



POLE VAULTING.



BASKET BALL.

the "scent," the skill displayed by the hares in bewildering the dogs, all contribute to make this a good after-school game.

Truck.

This is a fine old-fashioned game for eighth grade boys. It requires no apparatus other than home-made bats and "trucks."

The "truck" is a six-inch or eight-inch wheel cut out of a one-inch hardwood board. The bats are pieces of sapling or limbs of trees taken from the woodpile. They should be about three feet long and one inch or one and one quarter inches in diameter.

A common road or back street, where there is little passing, is an ideal playground for this game.

Sides are chosen and perhaps ten players line up facing each other and about thirty feet to fifty feet apart.

The captain who is to start the game takes the "truck" in his hand and rolls it swiftly towards his opponents, who must stop it with their bats. If they do so stop it the captain of that side now rolls it back, the other side having to stop it if they can. If the truck rolls past the players on either side that side must retreat as far as the truck rolls before being stopped and the other side advances. So back and forth they roll the truck, the sides advancing or retreating according as the truck stops or is stopped. The game is played for a certain number of minutes, agreed upon before it commences. When the time is up the referee signals and the position of the truck with reference to the starting line at that moment determines which side has won.

If the truck is in the hands of a player when the signal is given he must not roll it but must stand still until the referee notes his position.

If the truck is rolling, then the place where it is stopped by the players, or where it stops itself, if the players fail to stop it, is the final point for determining who won. The starting line is just half way between the players as they first line up, and must be marked in some way before the game commences.

CHAPTER XVIII.

THE TEACHING OF ANY TOPIC.

Hearing recitations is not teaching. The teacher is not worthy of the name who is not imparting anything to children, but is simply steering them through a textbook. The following outline of the "five steps in teaching" is added to the program of studies as a guide to teachers who are ambitious to become such in deed as well as in name. The outline is applicable to the largest part of school work in the third year and upwards,—at least to arithmetic, geography, history, physiology, and civics.

The subject should first be divided into a coherent system of topics. The chapter headings of textbooks usually do this. Then each topic should be taught as a whole in the following manner:

I. PREPARATION (books closed).

(a) The teacher discovers to the class and to herself, by skillful questioning or otherwise, what the pupils already know of the topic. There are few topics, even if under treatment for the first time, about which pupils do not already know something. This step will of course usually be a means of reviewing previous work.

(b) After the teacher has exhausted the present knowledge of the class upon the topic, she carries as far as possible the process of requiring the class to predict, on the basis of what it already knows, what it will probably learn. Often the class will predict pretty accurately the essentials of the topic. Of course in this case the succeeding steps may be greatly abridged.

This step establishes the all important connection between what the pupils already know and what they are to learn. The step may take from half a period to several periods on successive days.

II. PRESENTATION (books closed).

The teacher sums up to the class what they already know and explains the whole course of the new topic clearly and briefly, pausing to re-explain more carefully whenever a pupil seems not to be following. Of course this step is a continuation of the story telling discussed under impressional language, which see. It is substantially giving the class a "birdseye view." It may involve one or more experiments or other objective lessons. In arithmetic, the teacher will work out and explain several illustrative examples.

The step is an important one and requires that the teacher should constantly be growing in the power of interesting lecturing. It should usually be complete in one period.

III. ASSIMILATION (books open).

This is the step which takes time and it is the step which taxes the teacher's ingenuity for illustrative material. It may usually begin with careful class reading of the chapter in the textbook.

In arithmetic, it is the step at which pupils work out a large number of illustrative examples.

In geography, it is the point at which sand table, modeling, magazine and newspaper clipping, and mounting of photographs, field excursions, class experimentation, come in.

In history, it is the time for collateral reading, dramatization, study of photographs and other pictures, map drawing, and history themes.

In high school science, it is the laboratory period.

The teacher will need to give frequent short quizzes to make sure that pupils are following.

The step may need from one period to several weeks.

IV. STUDY (books, library, notes,—all open).

The teacher should remain silent; this is the time for pupils to depend upon themselves.

Essentially, the step is an opportunity for the pupil to prepare for the next step, by systematization of what he has gained in previous steps. He should be assisted by a board syllabus prepared sometimes by the teacher, sometimes by a pupil. In the two upper grades he should be required to prepare his own syllabus.

Time allowance, one or two periods.

V. RECITATION (books and all other help closed).

The reverse of the second step. The pupil makes a coherent presentation or explanation of the subject. The teacher should remain silent for the most part. Especially avoid dragging the pupil through by leading questions; the place for that is under the first step.

The recitation is a most important side of the work. It clinches the pupil's grasp upon the topic as nothing else can. Moreover, it is an invaluable form of language work, being one of the best possible forms of composition.

In arithmetic, the recitation consists mainly in sending pupils to the board to work out there *and explain* various forms of examples illustrating the topic. Arithmetic recitations need a longer time than others, sufficient for every pupil to have explained at least one example,—more if possible.

In geography, history, and other subjects, the recitation will usually be from a syllabus. The pupil should be required to illustrate his statements, as he goes along, with apparatus.

In these subjects, from one to three periods will be needed.

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CHAPTER XIX.

EXAMINATIONS AND TESTING.

An essential part of any work which claims to be conducted on scientific lines is constant verification. This applies to school work as much as to any other. The teacher, or superintendent, or school system, is bound to show results. The results must be real educational values, true mental growth, and these things are hard to prove; but, none the less, the teacher must convince himself and the community that there are reasonable grounds for supposing the existence of such values.

To this end, the teacher must constantly test the *steps* in the educational process. The process as a whole is not susceptible of being tested except by the whole of the pupil's after life and perhaps not even then; but the steps can be tested. The teacher cannot safely trust to his impression that a topic of a month's or term's work has resulted in the pupils knowing what they have been taught. He must constantly test his work by impartial examination and base all future teaching upon the result of that examination. He should usually keep a careful record of the results of such examinations, having regard (a) to the records of individual pupils, (b) to the successive general averages of the class as a whole. Certain principles which should govern examinations are here noted:

I. A single examination is of little value; the average of two or more examinations will usually give a close approximation to the truth. On any one occasion the conditions of temper, climate, outside disturbance, etc., may be such as to invalidate results.

II. Written examinations are not the only form; they are commonly the most available form.

III. Examinations should not be given by the person who has taught the class. It will eliminate the personal equation to have them given by some other person.

IV. Examination papers should not be corrected by either examiner or teacher. There are two personal equations to be eliminated here.

V. Examinations should not be carried to the point of worrying children unduly, nor should they be omitted because some children fret over them. Life has many tests and it is important that children should learn to meet tests courageously and confidently.

VI. Examinations should never be announced beforehand unless absolutely necessary. An examination upon current school work of which the pupils know beforehand and for which they specifically prepare themselves is no examination, but merely a written recitation.

KEY TO ABBREVIATIONS USED.

A. B. C.	American Book Co.
A. M. & G.	Atkinson, Mentzer & Grover.
Appleton	D. Appleton & Co.
B. H. S. & Co.	Benjamin H. Sanborn & Co.
D. M. & Co.	Dodd, Mead & Co.
D. P. & Co.	Doubleday, Page & Co.
Ed. Pub. Co.	Education Publishing Co.
Flanagan	A. Flanagan & Co.
Ginn	Ginn & Co.
Holt	Henry Holt & Co.
Heath	D. C. Heath & Co.
H. M. & Co.	Houghton, Mifflin & Co.
I. B. & Co.	Iverson, Blakeman & Co.
L. & S.	Lee & Shepard.
L. B. & Co.	Little, Brown & Co.
Longmans	Longmans, Green & Co.
MacM.	The Macmillan Co.
M. M. & Co.	Maynard, Merrill & Co.
M. W. Co.	McGill-Warner Co.
P. S. Pub. Co.	Public School Publishing Co.
Putnams.	G. P. Putnam & Co.
R. M. & Co.	Rand, McNally & Co.
S. F. & Co.	Scott, Foresman & Co.
Silver	Silver, Burdett & Co.
T. B. & Co.	Thompson, Brown & Co.
Univ. Pub. Co.	University Publishing Co.

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